국제학 석사학위논문

Income inequality and redistribution:

Does democracy matter?

소득불평등과 재분배:

민주주의의 영향을 중심으로

2017년 8월

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국제학과 국제지역학 전공

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Submitting a master's thesis in International Area Studies

August 2017

Graduate School of Seoul National University

International Area Studies, International Studies

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Confirming the master's thesis written by Jeremy Lim

June 2017

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이 논문을 국제학 석사학위논문으로 제출함

2017년 8월

서울대학교 국제대학원

국제학과 국제지역학 전공

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Jeremy Lim의 석사학위논문을 인준함

2017년 6월

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Abstract

Income inequality and redistribution: Does democracy matter?

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Recent quantitative research on democratic countries has found a positive relationship between income inequality and redistribution. In other words, democracies respond to higher inequality by redistributing more. Can similar sensitivity be seen in non-democracies? This paper seeks an answer by assembling a sample of 160 countries that vary across political system and level of development from 1961 to 2015. I find weak and non-significant differences between regime types, suggesting that both democracies and non-democracies are concerned about reducing inequality. My findings challenge the logic of prior literature that explain redistribution with the median voter model, a mechanism that should only be found in democracies. I also find that population ageing is related to redistribution in all regimes, reflecting the automatic role of pension programmes more than fears of 'gerontocracy', where the elderly abuse their voting power to enact unsustainable increases in pension generosity. I suggest that more attention can be paid to the redistributive motivations of political actors in both democracies and non-democracies and their role in forging social contracts that legitimate the state.

Keywords: Income inequality, redistribution, welfare state, median voter, democracy, autocracy, gerontocracy

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Figures A1 to A2 and Tables A1 to A28 can be found in the Appendix.

1. Introduction: The theoretical background on democracy, inequality, and redistribution

Does democracy matter for economic inequality? The classic political economy answer is that it should. Beginning with Aristotle, scholars reasoned that shared political power would result in shared economic wealth[1]. Lenski (1996, 63) wrote that "the distribution of rewards in a society is a function of the distribution of power, not of system needs".

Building a formal explanation for this idea, however, is a difficult task. How should we conceptualise and measure economic inequality? To answer, we have to first ask why we are interested in economic inequality in the first place. Milanovic (2011, 18) suggests that economic inequality is important because it affects efficiency and justice, two aims that are difficult to reconcile. For example, high inequality may incentivise individuals to work harder for greater rewards, but fail to maximise the "social welfare" of all members of a community. Atkinson (2015, 16) argues that the distribution of income matters to us because we are inherently social beings.

These reasons guide our choice of definition. Clearly, we are interested in inequality between individuals, not households, social classes, geographical regions, or countries. Furthermore, because we are studying the relationship between politics and economics, the most convenient unit of analysis is the state, which is a distinct polity. Thus, we can narrow our focus to inequality between individuals in a given country. This decision should not be taken for granted, as much of the historical literature has been on class inequality.

It was Pareto (1967) and Kuznets (1955) who turned the spotlight on inequality between individuals, and in particular, income inequality between individuals. Although assets and land ownership are also important, income has received the most scholarly interest. This could be because it is directly linked to consumption and the standard of

[1] (De Tocqueville 1835b; Mill 1862; Key 1949; Lipset 1960)

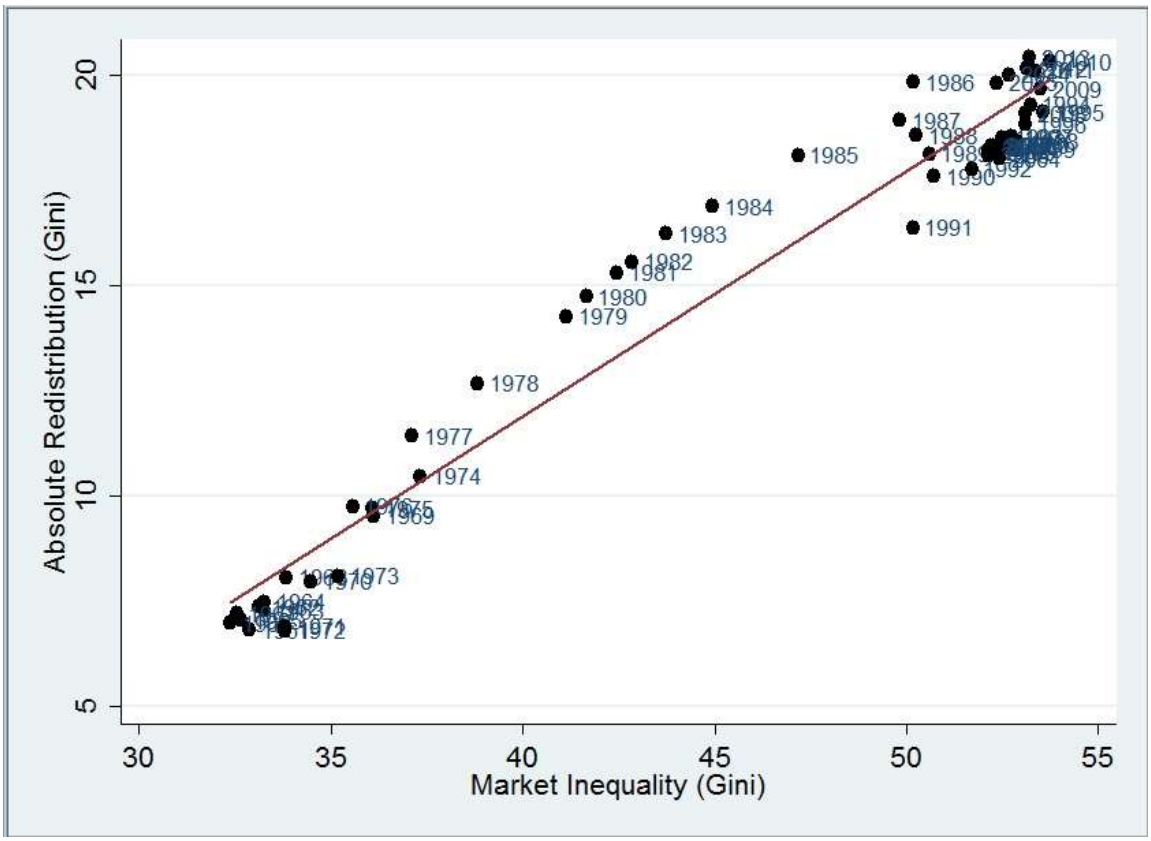
living. Alternatively, Western societies might be biased towards discussions on income because they regard the negotiation of property rights as off-limits.

Having arrived at a basic idea of the type of economic inequality that we are interested in, we can now return to our first question. How does democratic politics affect inequality? This is also a field with a large and complex literature. Not only can democracy work in many indirect ways that are difficult to track (such as legalising trade unions that strike for higher wages), it is hard to disentangle the effects of democracy from other causal factors, such as culture, history, and global economic forces. Furthermore, there is a problem of reverse causation because inequality may also affect a country's chances at successful democratisation.

To test if democracy has an impact on inequality, therefore, we need to zoom in on a particular channel through which it is said to act. This paper deals with a specific strand of literature on the redistribution of income, or the reallocation of income from the rich to the poor through taxes and transfers. Redistribution is entirely a product of state policy, so the focus on redistribution helps to pin down the role of the political system in relation to inequality. If a democratic state is truly egalitarian-minded, it should naturally attempt to reduce income inequality through redistribution.

The mechanic of this logic is often explained with an application of Down's (1957) median voter theory, developed by Romer (1975), Roberts (1977) and Meltzer and Richard (1981). Median voter theory assumes that state policy on a given issue is decided by voters. As the interests of voters at opposite ends of the spectrum cancel each other out, political parties that form the government adopt the policy preference of the voter 'in the middle'. The poor always outnumber the rich, so this median voter is necessarily a relatively poor person who prefers redistribution. As inequality rises, the income of this median voter falls relative to the mean, and he or she demands more redistribution from the state. Therefore, inequality and redistribution should be positively correlated (Figure 1).

Figure 1. Inequality and redistribution in the United Kingdom, 1961-2015

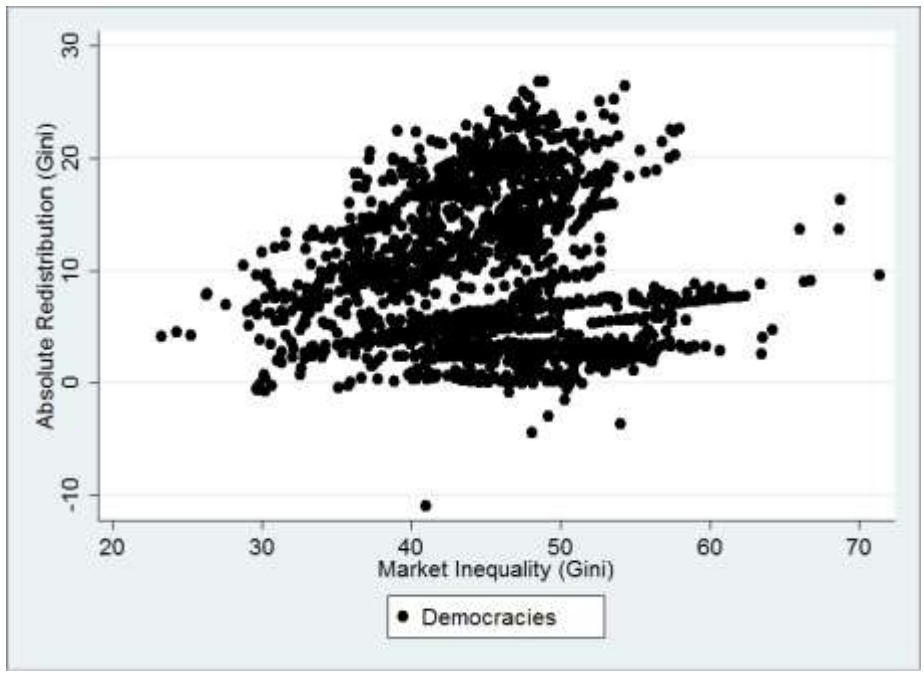


Source: Solt (2016) SWIID 5.1

The main caveat implicit in the median voter model is that it is only applicable to democracies, because it relies on electoral competition to select a government that will implement the policy choice of the median voter. If the median voter model functions as expected, we should expect to see a practical difference between the redistributive policies of democracies and non-democracies[2] (Figures 2 and 3).

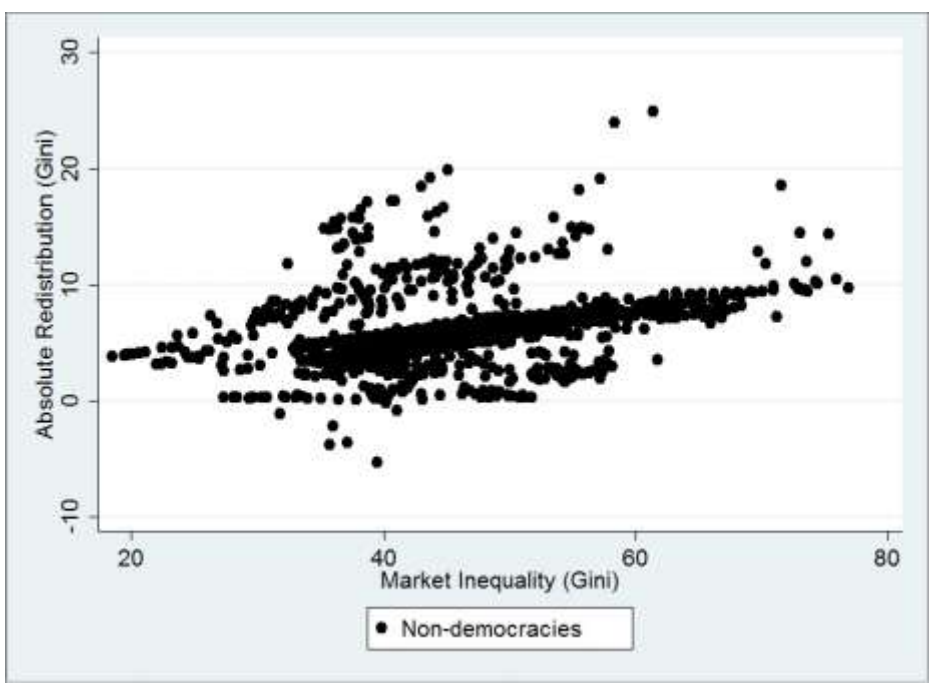
[2] (Boix 1998; Mulligan, Gil, and Sala-i-Martin 2004; Kenworthy and Pontusson 2005; Rudra and Haggard 2005)

Figure 2. Inequality and redistribution in democracies, 1961-2015



Sources: Solt (2016) SWIID 5.1; Cheibub, Vreeland, and Gandhi (2010) DD

Figure 3. Inequality and redistribution in non-democracies, 1961-2015



Sources: Solt (2016) SWIID 5.1; Cheibub, Vreeland, and Gandhi (2010) DD

However, there are many reasons to believe that the median voter model does not function as expected[3]. In reality, the policy space is multi-dimensional, and voters can only choose 'policy bundles' covering diverse issues from immigration to tax progressivity. Voters may choose to compromise on their redistributive preferences for other gains. For example, Bellettini and Ceroni (2007) suggest that the poor may form a coalition with the rich to prioritise liquidity over redistribution. Furthermore, many countries have multiple political parties that target specific constituencies (right-wing Christian, racial minority and so on) rather than simply appealing to the median voter. Many authors have argued for the prevalence of plutocracy, or the dominance of the rich over the political process[4].

Nevertheless, these limitations have not stopped the median voter model from becoming the dominant paradigm linking inequality and redistribution. One group of papers attempted to find cross-national empirical proof linking inequality and redistribution, and thus prove or disprove the median voter model[5]. Another group used the median voter model as a building block for theories on growth or regime transitions[6].

The problem with the first group of research is that a lack of data on developing countries led to cross-country samples highly skewed towards democracy (Table 1). Thus, although a statistical relation may be found between inequality and redistribution, it is hard to conclude if this is proof of the median voter model or some other mechanism common to all regimes.

The validity of the second group depends on a sound conclusion from the first. For example, Acemoglu and Robinson (2001) assume that only democracies redistribute. They conclude that in a highly unequal society, the poor are incentivised to revolt and introduce democracy (to enjoy redistribution) while the rich are incentivised to hold a coup and

[3] (Downs 1957; Edelman 1964; Lindblom 1977; Lijphart 1984)

[4] (Harms and Zink 2003; Karabarbounis 2011; Milanovic 2016)

[5] (Bassett, Burkett, and Putterman 1999; Milanovic 2000; Mulligan, Gil, and Sala-i-Martin 2004; Avelino, Brown, and Hunter 2005; Kenworthy and Pontusson 2005; Rudra and Haggard 2005)

[6] (Alesina and Rodrik 1994; Muller 1995; Acemoglu and Robinson 2001; Boix 2003; Albertus and Menaldo 2014; Ansell and Samuels 2014)

install a dictatorship (to stop redistribution). However, if the median voter model cannot be proven, we have no reason to think that redistribution would be different under democracy or dictatorship. A similar weakness can be seen in Gradstein and Milanovic's (2004) reasoning that because democracies redistribute, they would have lower inequality than non-democracies.

Table 1. Regime type coverage of prior literature on inequality and redistribution

	Dependent Variable	Measure of inequality	Democracies	Non-democracies
Persson & Tabellini 1994	Transfers	3rd Quintile share	13	0
Lindert 1996	Welfare	Market	19	0
Bassett et al. 1999	Welfare	Net	32	0
Milanovic 2000	Redistribution	Market	22	2
De Mello & Tiongson 2006	Welfare	Net & Market	Undefined (54)	
Kenworthy & Pontusson 2005	Redistribution	Market	11	0
Shelton 2007	Transfers	Net & Market	Undefined (43)	
Larcinese 2007	Welfare	Net & Market	41	0
Mahler 2008	Redistribution	Market	13	0
Scervini 2010	Redistribution	Market	24	0
Houle & Kenny 2016	Redistribution	Market	Undefined (19)	
Houle 2016b	Redistribution	Market	89	0

*Countries that undergo a regime transition are counted for both totals.

Additionally, there is a wide-ranging spectrum of literature[7] on the benefits of democracy for development. Many of these theories operate on the assumption that democracy is, at least regarding egalitarian policies, a better service provider than other regime types.

A large amount of literature thus rests on the back of the application of median voter theory to inequality and redistribution. It is unfortunate that this application has not been tested across a sample of democracies and non-democracies, especially in the developing world. Although data availability is part of the issue, few studies question the need to directly test the effects of regime type. This leads to a teleological argument where

[7] (Moon and Dixon 1985; Dasgupta 1993; Boone 1996; Sen 1999; Zweifel and Navia 2000; McGuire 2001; Siegle, Weinstein, and Halperin 2004)

studies only look at democracies; whatever relationship they find is then attributed to democracy.

To overcome the ideological bias in this form of research, I plan to push the median voter argument to its logical conclusion – that democracies and non-democracies will differ with regards to the relationship between inequality and redistribution. If this turns out to be true, then it makes sense to continue using median voter theory to model the relationship between political system and economic outcomes. If it is false, then perhaps existing literature has been based on the wrong platform to begin with. Instead of a theory that revolves around elections, we may need to begin the search for a more generalised model of political economy that can apply to both democratic and autocratic states.

2. Literature review: Cross-country empirical tests linking income inequality and redistribution

2.1. Weaknesses of prior literature

Despite the volume of literature on this topic, the empirical tests used in previous studies leave room for improvement.

First, most cross-national studies are limited to the rich capitalist democracies, often due to reliance on OECD or Luxembourg Income Study (LIS) data. Additionally, there are also several studies covering Latin America[8] but a noticeable lack of attention on Asia. Among the studies with wider coverage, Perotti (1995) includes a good mix of 67 developed and developing countries but regresses inequality on growth instead of redistribution. The largest sample to date might be Houle's (2016b) study of 89 countries but this is limited to democracies.

Second, the median voter model is meant to explain redistribution (Kenworthy and Pontusson 2005) but due to a lack of data, many studies substitute government

[8] (Kaufman and Segura-Ubiergo 2001; Avelino, Brown, and Hunter 2005; Shelton 2007; Houle and Kenny 2016)

revenue/spending or welfare spending as the dependent variable (see Table 1). This is a poor proxy because welfare spending can have many components, some of which are not redistributive, and therefore unrelated to inequality and the interests of the median (income) voter (Milanovic 2000). For example, Esping-Anderson (1990) argues that "corporatist" European continental states collect tax from and transfer welfare to the same groups, while Segura-Ubiergo (2007) shows that health and education spending in Latin America benefits the upper class. The correct way to measure (progressive) redistribution is to calculate the difference between market and net inequality, but studies that achieve this are mostly limited in sample size (see Table 1).

Third, the Gini coefficient is commonly used to measure inequality due to its availability. However, Gini is an imperfect proxy for the income difference between the median and mean voters. A single Gini statistic can conceal variations in income structure that might be better exposed through a quintile or 90/10 approach (Piketty 2014).

Fourth, it can be intuitively argued that states implement redistributive policy in response to market (pre-tax and transfer) inequality. However, some studies use the more widely available net (post-tax and transfer) inequality measure instead (see Table 1). This is not only theoretically flawed but also risks endogeneity problems.

Fifth, the income of the median voter should theoretically depend on the income skewness of voter turnout. For example, low turnout in US elections reflects a poor showing by the low-income population. (Mahler 2008) This may result in the income of the median voter approaching or exceeding the mean income of the population, violating a key assumption of Meltzer and Richard's (1981) model. Studies that do not control for voter turnout are unable to identify such a situation.

Sixth, not all studies account for country fixed effects. This ignores country-specific factors such as culture or the "stickiness" of existing levels of redistribution (Houle 2016b). For example, Inglot (2008) argues that the forms of social security offered in present-day Poland, Hungary and the Czech and Slovak Republics can be traced back not only to the communist era but also the 19th century Bismarckian welfare state. Studies that do include

fixed effects often fail to model the appropriate interaction term to test for sensitivity rather than base levels (see section 4.1.).

2.2. Key contributions of prior literature

I will briefly review four papers that empirically test the median voter model with the appropriate measures of market inequality and redistribution.

Milanovic (2000) was the first to use the 'correct' concepts of market inequality and redistribution instead of the net inequality and welfare spending that were previously used as proxies. This was possible with LIS data, of which four waves had been released by 1999. The study was limited to 24 countries, most of which were established democracies. Market inequality was measured as a Gini coefficient or alternatively, as the income share of the poorest 20% or 50% of the population. Redistribution was measured as the change in income share of the poorest 20% or 50% of the population after tax and transfers – in other words, the difference between market and net inequality. In a fixed effects regression, he found a positive link between market inequality and redistribution. The income share gain of the poor was larger in more unequal countries. However, the fifth and sixth market income deciles experienced negative share gain. In other words, the median voter is a net tax payer. Without accounting for in-kind transfers such as education and public health, the median voter did not seem to benefit from redistribution.

Kenworthy and Pontusson (2005) were innovative because they distinguished between individual and household income inequality. Using LIS data for 11 OECD countries, they showed that the individual-level data was consistent with Varieties of Capitalism predictions of rising inequality in only liberal market democracies from 1979-2000, but that the household-level data showed rising inequality across all countries. Inequality was measured as a Gini coefficient and redistribution was defined as the difference between market inequality and net inequality. In a pooled OLS regression estimating redistribution, they found significant and positive coefficients for both

inequality and voter turnout. This led them to suggest a synthesis of median voter and power resource theory, where the influence of voters is conditional on their turnout at the ballot box.

Mahler (2008) confirmed the voter turnout hypothesis by combining LIS and International Institute for Democracy and Electoral Assistance (International IDEA) data for 13 developed democracies. He tests various measures of redistribution including total fiscal redistribution, 75/25 reduction and relative poverty. In most cases, inequality and turnout both have a significant and positive coefficient. Furthermore, he used Comparative Study of Electoral Systems data to measure the turnout of each income quintile, finding that voter turnout was highly skewed towards the rich. Countries with low turnout such as the US and Switzerland also had the most severe income skew. This strengthens the argument that the median voter mechanism is conditional on turnout.

Houle (2016b) improved on the limited sample size of previous studies by covering 89 developed and developing democracies with the Standardized World Income Inequality Database (SWIID) 5.0. Inequality was measured as a Gini coefficient and redistribution was defined as the change in inequality after tax and transfers. Also, both *Absolute redistribution* and a percentage measure of *Relative redistribution* were tested. In both fixed effects and lagged DV regressions, he establishes a positive relationship between inequality and redistribution in line with median voter theory. He also shows that the ethno-linguistic fractionalisation of the poor can reduce their ability to mobilise in support of redistribution.

3. Variable choices, measurements and data sources

3.1. Income inequality

The main reason for the limited sample size of previous studies was the lack of income inequality data for developing countries. The early studies of the 1990s used a motley of sources, notably Jain (1973). Milanovic's (2000) pioneering paper used the LIS which quickly became the "gold standard" (Solt 2016) for inequality data; however, it was limited to a handful of rich capitalist democracies. Although the LIS has since been expanded, it currently stands at only 47 countries[9], representing a severe selection bias in favour of the developed world.

Alternatives to the LIS that have broader coverage include the Deininger-Squire (1996) dataset, Milanovic's (2012) All the Ginis dataset, and UNU-WIDER's (2015) WIID 3b dataset. However, Solt's (2016) SWIID 5.1 dataset exceeds all other alternatives in coverage, at the expense of comparability. This is because the SWIID draws from multiple sources that use different measurements (Solt 2016). Missing data is then estimated through a multiple imputation process that is not without flaws (Ferreira, Lustig, and Teles 2015; Jenkins 2015; Wittenberg 2015). Another limitation of the SWIID is that it only provides Gini data, which is an imperfect proxy for the income of the median voter (as explained in section 2.1.).

Despite these issues, the SWIID with its coverage of 160 current UN member states is currently the best option for a cross-national, time-series study of different political systems. High quality datasets like the Luxembourg Income Study simply do not have enough variation in regime type and level of development (see Tables 2 and 3). Keeping in mind that any choice of data is a trade-off between quality and coverage, this paper runs with the SWIID on the grounds that it is important to investigate inequality and redistribution in non-democracies, even if the conclusions must necessarily be tentative.

[9] According to http://www.lisdatacenter.org/our-data/lis-database/by-country/ as of 30 August 2016.

To address the issue of data accuracy, my main results are redone with a restricted sample of reliable observations (Table A21), where each country has at least three observations of inequality (Solt 2016).

Table 2. Political variation in country-year observations of LIS and SWIID

	Democ (Polity IV, 2016)		Party-competitive (Polity IV, 2016)		Multiparty-electoral (Cheibub et al., 2010)	
	>5	≤5	Yes	No	Yes	No
LIS 2017	269 (96%)	12 (4%)	195 (72%)	74 (28%)	189 (94%)	12 (6%)
SWIID 5.1	2432 (65%)	1314 (35%)	1111 (31%)	2478 (69%)	2481 (77%)	746 (23%)

*Non-UN members and predecessor states were dropped.

Table 3. GDP and regional variation in country-year observations of LIS and SWIID

	GDP per capita (constant 2010 US$)				'Western'*	
	<1000	1000-5000	5000-20,000	>20,000	Yes	No
LIS 2017	1 (1%)	13 (7%)	82 (43%)	96 (50%)	182 (65%)	99 (35%)
SWIID 5.1	699 (19%)	1172 (31%)	860 (23%)	1015 (27%)	998 (36%)	2748 (64%)

*Europe, the US, Canada, Australia, and New Zealand

3.2. Redistribution

Redistribution is difficult to quantify in comparative terms as it always involves a value judgment. If the state gives a jobless man $400 in unemployment benefits, is it the equivalent of a $400 medical subsidy for a low-income single mom? Is a 2% tax hike in Australia, where the richest 1% earn 9% of all income, as redistributive as the same in America, where the share of the top 1% is 22%? If Brazil lowers its Gini coefficient from 60 to 40, does it take similar political will for Bangladesh to go from 40 to 20?

Prior literature, beginning with Milanovic (2000), defines redistribution as the change in inequality after tax and transfers. Therefore, following Houle (2016b), I subtract *Net inequality* from *Market inequality* to obtain *Absolute redistribution*. Not everyone will

agree with this definition, which explicitly links the measure of redistribution to the measure of inequality.

Nevertheless, *Absolute redistribution* has several useful properties. First, it clearly reflects a transfer from richer individuals to poorer ones, unlike measures of taxation, where the beneficiary is unclear. Second, it avoids "level effects" (Kenworthy and Pontusson 2005) associated with percentage measures such as social spending over GDP, where a change in the denominator alone can affect results. Third, it can measure both progressive and regressive redistribution, which appear as positive and negative figures respectively.

The most serious criticism of *Absolute redistribution* comes from Lind (2005), who finds a "mechanical correlation" between inequality and redistribution because the same level of tax has a greater effect in a more unequal society. This is a serious challenge to papers that seek to prove the median voter mechanism (such as Houle 2016b), but not as life-threatening to my line of enquiry, which is the difference between regime types.

Another possibility is to divide *Absolute redistribution* by *Market inequality* and obtain a percentage measure of *Relative redistribution*. However, for the SWIID, Solt (2016) uses a technique of multiple imputation whereby each observation is assigned 100 'imputations' that express the reliability of the observation and help to manage missing data. This process distorts the point estimate of percentage values such as *Relative redistribution* (see Appendix). Thus, I present only *Absolute redistribution* in my results.

3.3. Democracy and political system

I test my results across a comprehensive set of political measures. This covers the possibility that only certain aspects or combinations of 'democracy' affect redistribution. For example, the US in 2012 had a 'perfect' *Civil liberties* score of 1 (Freedom House 2016), a *Presidential turnout* of only 54% (International IDEA 2016), and we would like to know which of the two is (more) important for redistribution.

First, I employ the widely used 'continuous' variables *Democ*[10] and *Autoc* from Marshall, Gurr, and Jaggers (2016) and *Political rights* and *Civil liberties* from Freedom House (2016). The advantage of continuous measures is that we can account for semi-democracies that do not fit easily into dichotomous measures[11]. This covers the possibility that semi-democracies might have more responsive policies than non-democracies, but less than full democracies. Furthermore, we can model gradual transitions and consolidation of democracy[12]. The disadvantage is that it is unclear what is being measured because these so-called 'continuous' variables are actually a composite of many indicators[13] or the result of non-transparent 'expert coding'.

Second, I employ several dichotomous variables reflecting concepts of 'democracy'.

Multiparty-electoral (Cheibub, Gandhi, and Vreeland 2010) indicates that more than one party participates in elections for the right to rule. This comes closest to a "minimalist" definition of democracy (Schumpeter 1934; Przeworski 1999) and includes 77% of the observations in my data. *Alternation-constitutional* adds the conditions that the ruling party must alternate and refrain from unconstitutional methods of competition, somewhat in vein with Dahl's (1971, 1982) ideal polyarchy. *Suffrage-electoral* (Boix, Miller, and Rosato 2013) requires that more than 50% of the male population can vote, and also "free and fair" elections in line with O'Donnell's (1993) concept of democracy.

[10] I do not use the popular 'Polity2' score because averaging the *Democ* and *Autoc* scores defeats the purpose of having separate indicators and conceals diversity of regime type (Marshall, Jaggers, and Gurr 2002).

[11] Armenia from 1991 to 2007 is coded as a democracy by Cheibub, Gandhi, and Vreeland (2010), but not by Boix, Miller, and Rosato (2013). *Democ* offers a much more nuanced picture with values of 0,4,5,6 and 7 during the period.

[12] Dichotomous measures show that Chile became a democracy in 1990 (Cheibub, Gandhi, and Vreeland 2010; Boix, Miller, and Rosato 2013). However, *Democ* starts at 8 in 1989 and gradually rises to 10 by 2006, reflecting the consolidation of democracy.

[13] Gleditsch and Ward (1997) show that the *Polity* score can be arrived at with 1512 different combinations of its components, making it a categorical measure rather than the continuous measure it is often made out to be. Shelton (2007) calls the *Political rights* score an "ordinal index of dubious cardinality".

Legislative-competitive and *Executive-competitive* (Cruz, Keefer, and Scartascini 2016) indicate that the ruling party or executive won less than 75% of the seats or votes in line with Hill's (1994) ideal of "competitiveness among political parties". *Party-competitive* (Marshall, Gurr, and Jaggers 2016) indicates "stable and secular" party competition (as opposed to factional or patronage politics) and is the most exclusive measure, including only 31% of observations.

An advantage of the dichotomous approach is that coding is systematic and predictable, such that we are clear of the conditions that must be present for a country to be called a democracy. A disadvantage is that in the case of transition regimes, we end up with an indicator that shows an abrupt leap from 0 to 1.

Third, I account for regime age in Table A9 to address the possibility that 'consolidated' democracies function differently from 'new' democracies.

Fourth, I control for parliamentary, presidential and semi-presidential systems in Table A10, in response to Gradstein, Milanovic, and Ying's (2001) claim that parliamentary systems redistribute more. Two sets of measures are tested, with Cheibub, Gandhi, and Vreeland (2010) coding only democracies and Cruz, Keefer, and Scartascini (2016) including all regimes.

Fifth, I control for electoral system in Table A11. Persson, Roland, and Tabellini (1998) and Austen-Smith (2000) argue that majoritarianism redistributes more because it can target transfers to a few key electoral districts. Milesi-Ferretti, Perotti, and Rostagno (2002) claim instead that proportionally elected candidates work harder for redistribution because they are responsible to social rather than geographic groups. Again, two sets of measures are tested, one for democracies and one for all regimes.

Sixth, I control for turnout in Tables A12 and A13 according to the recommendations of Kenworthy and Pontusson (2005) and Mahler (2008). Turnout is divided into parliamentary and presidential turnout. I follow Altman and Perez-Linan (2002) in calculating turnout as voter over voting age population, rather than registered voters.

3.4. Economic and demographic controls

With the large base of empirical literature on this topic, different adaptions of the basic model have been proposed, and several control variables were found to be significant in one study or another. I have attempted to test as many of these variations as possible to show that my findings are not the result of an idiosyncratic model specification. I general, I only conducted a control or robustness test in response to a claim made in prior literature. These tests alone generated 24 tables in the Appendix. I refrained from adding new control variables because they would distract from my focus in testing the viability of prior claims on a bigger sample of countries.

First, I control for the effects of globalisation by regressing trade, growth and inflation in Table A14. Globalisation is controversial because prior literature disagrees[14] on the direction of its effect on redistribution. (Garrett 2001) The "efficiency hypothesis" claims that exposure to international markets will force the state to become leaner and more competitive, cutting redistribution. The "compensation hypothesis" claims that labour, when faced with external forces and risks, will pressure the state into reinforcing redistributive safety nets. Controls for reserves per capita (logged), population (logged) and urbanisation are also included.

Second, it is possible that richer countries redistribute more so I control for GDP per capita (logged) in the main results (Table 4). Kuznets (1955) predicts a quadratic relationship between development and inequality while Soifer (2013) and Houle (2016a) argue that inequality has different effects on redistribution at different levels of development. Therefore, I control for the quadratic term and interactions with inequality in Table A15.

Third, Milanovic (2000) and others [15] argue that pensions are a locked-in commitment to redistribution that grows automatically. Thus, I control for elderly

[14] The efficiency hypothesis is supported by Garrett (1999) while the compensation hypothesis is supported by Rudra (2002) and Avelino et al. (2005). Kaufman and Segura-Ubiergo (2001) find evidence for both sides. Iversen and Cusack (2000) reject both hypotheses.

[15] (Perotti 1996; Bassett, Burkett, and Putterman 1999; Rudra and Haggard 2005; Houle 2016b)

population and its interaction with inequality in Table 4. Additionally, the 'grey power' or 'gerontocracy' thesis[16] asserts that the elderly exert voting power to raise redistributive levels. Thus, I test if the impact of the elderly population increases with democracy in Table 5.

Fourth, I control for Catholic, Protestant and Muslim populations[17] in Table A19. I test two measures of religion; the first is a widely used single-observation time-invariant measure (Gandhi 2004) and the second is a time-variant measure that I created through linear inter/extrapolation from four observations in the World Religion Database (2017). Additionally, in response to Gradstein, Milanovic, and Ying's (2001) claim that Judeo-Christian societies exhibit high redistribution after democratisation, I test the interactions of democracy, religion and inequality.

Fifth, I control for the fractionalisation or diversity of ethnicity, language and religion in Table A20. It is possible that in more divided societies, the poor are less able to mobilise around redistribution issues[18] (Houle 2016b). For example, Easterly and Levine (1997) find that ethnically fragmented African societies show lower spending on public goods. As my data includes more data on the developing world (and divided societies) than most prior studies, this is an important control.

4. Research design and results

4.1. Regression specification and importance of interaction term

To test the impact of democracy on the relationship between inequality and redistribution, I use the following linear regression model:

[16] (Pampel and Williamson 1985; Lindert 1996; Sinn and Uebelmesser 2003)
[17] Lindert (1994) argues that Protestants redistribute more than Catholics, while Scheve and Stasavage (2006) find no difference.
[18] (Alesina and Wacziarg 1998; Alesina, Glaeser, and Sacerdote 2001; Alesina et al. 2003; Houle 2016b)

$$Redistribution_{i,t} = a + b_1 Inequality_{i,t} + b_2 Democracy_{i,t} + b_3 Inequality_{i,t} \times Democracy_{i,t} + b_4{}' Controls_{i,t} + u_i + e_{i,t}$$

Whereby a is a constant, u represents country fixed effects and e is an error term. I use robust standard errors clustered by country (Beck and Katz 1995).

Fixed effects are recommended by several papers (Milanovic 2000; Larcinese 2007; Houle 2016b) because they account for unobserved country-specific factors (such as culture) or the expectation that levels of redistribution are 'sticky' and change only gradually over time. However, prior literature has not been explicit about what the fixed effects regression is testing for. Once the 'base level' of redistribution is accounted for, we are effectively testing for 'sensitivity', or the change in redistribution relative to the change in inequality. The difference between testing for base levels and testing for sensitivity is illustrated in Figures 4 and 5.

In the equation above, the sensitivity of redistribution to inequality (regardless of regime type) is captured by coefficient *b1*. This can be interpreted as the change in redistribution for every unit change in inequality. The impact of democracy alone is captured by coefficient *b2*. This tests for whether democracies and non-democracies have a different level of redistribution across the board, regardless of the level of inequality.

Coefficient *b3* serves a similar purpose to *b1*, but is weighted based on the level of 'democracy' in a country. It tests whether democracy increases a country's sensitivity to changes in inequality (Mulligan, Gil, and Sala-i-Martin 2004, 52). The interaction term functions for both dichotomous and continuous measures of democracies.

Most recent studies do not include a similar interaction term[19], although many older studies do[20]. I argue that the interaction term is a key test of the effect of democracy (or turnout and other political variables). If the median voter model works, we would expect

[19] (Kenworthy and Pontusson 2005; Larcinese 2007; Mahler 2008; Scervini 2012; Houle and Kenny 2016; Houle 2016b)

[20] (Alesina and Rodrik 1994; Persson and Tabellini 1994; Perotti 1996; De Mello and Tiongson 2006; Shelton 2007)

a democratic country with high inequality to have a different redistribution policy as compared to a democratic country with low inequality.

Figure 4. Levels of inequality and redistribution for 'imperfect democracies', 1961-2015

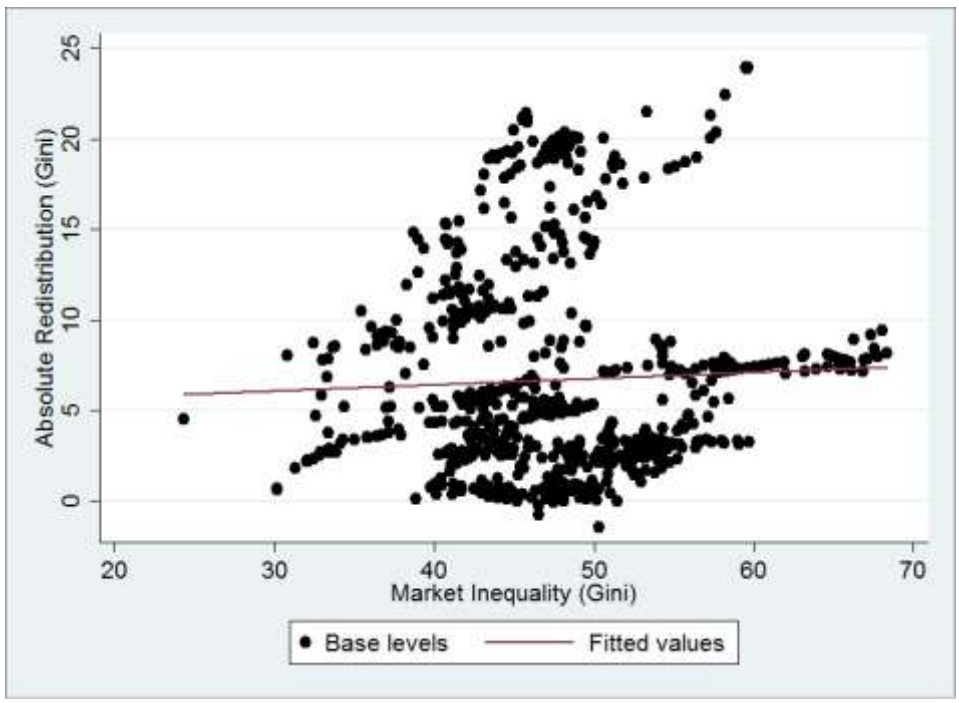
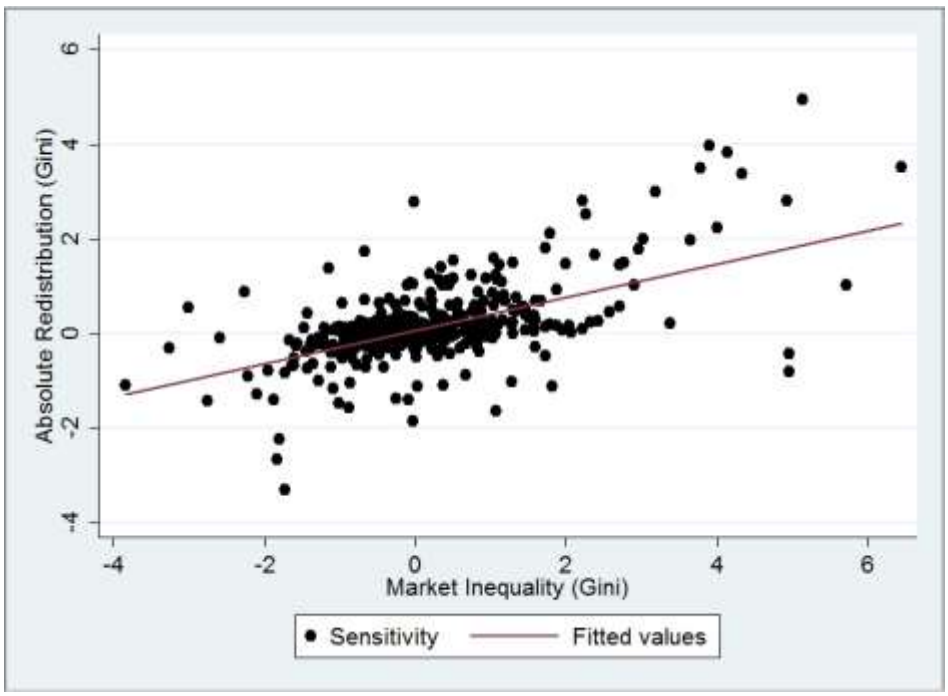


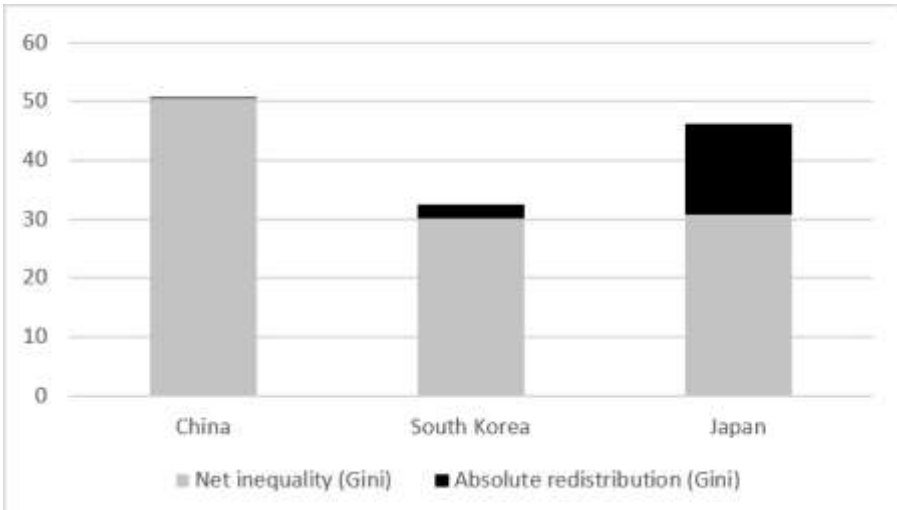
Figure 5. Change in inequality and redistribution for 'imperfect democracies', 1961-2015



Sample for Figures 4 and 5: Regimes with a *Democ* score of 8 or 9
Sources: Marshall, Gurr, and Jaggers (2016) Polity IV; Solt (2016) SWIID 5.1

To illustrate, consider the simplified example of three East Asian states (Figure 6). Japan and South Korea are classified as democracies, while China is not (Cheibub, Gandhi, and Vreeland 2010). Studies that test the effect of democracy alone would struggle to explain the vast difference in redistribution between Japan and South Korea, as well as the apparent similarity between South Korea and China. However, with the interaction term, we can capture the logic that Japanese democracy redistributes more in response to higher inequality.

Figure 6. Inequality and redistribution in three East Asian countries, 2011



Source: Solt (2016) SWIID 5.1

4.2. Main results

In Table 4, I test the effect of five measures of democracy on the relationship between inequality and redistribution. Although a Breusch-Pagan test on (non-imputed) point estimates indicates heteroskedasticity (chi2 = 90.89, p = 0.0000), a visual inspection (Annex Figure A2) suggests that it is not severe. Thus, following Chen et al. (2003), OLS estimates with robust clustered errors are used.

Table 4. Effect of inequality and political measures on absolute redistribution

Democracy measure	Continuous		Dichotomous		
	(1)	(2)	(3)	(4)	(5)
Inequality (market)	0.158**	0.108	0.171**	0.118*	0.175**
	(0.070)	(0.073)	(0.079)	(0.063)	(0.070)
Democ	-0.329				
	(0.282)				
Democ*Inequality	0.007				
	(0.006)				
Political rights		-0.577			
		(0.507)			
Political rights*Inequality		0.011			
		(0.011)			
Multiparty-electoral			-1.701		
			(2.271)		
Multiparty-electoral*Inequality			0.037		
			(0.051)		
Executive-competitive				-1.676	
				(1.779)	
Executive-competitive*Inequality				0.036	
				(0.041)	
Party-competitive					-6.021
					(3.906)
Party-competitive*Inequality					0.126
					(0.084)
GDP per capita	-0.322	-0.148	-0.355	0.178	-0.329
	(0.632)	(0.722)	(0.619)	(0.800)	(0.618)
Elderly	-1.228***	-1.362***	-1.295***	-1.484***	-1.130***
	(0.371)	(0.389)	(0.371)	(0.419)	(0.405)
Elderly*Inequality	0.029***	0.031***	0.030***	0.032***	0.026***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)
Country FEs	Y	Y	Y	Y	Y
Year FEs	N	N	N	N	N
Countries	148	160	160	155	148
Observations	3476	3437	3108	3367	3476
R-squared	.916	.925	.910	.925	.917
R-squared (adjusted)	.912	.921	.905	.921	.913

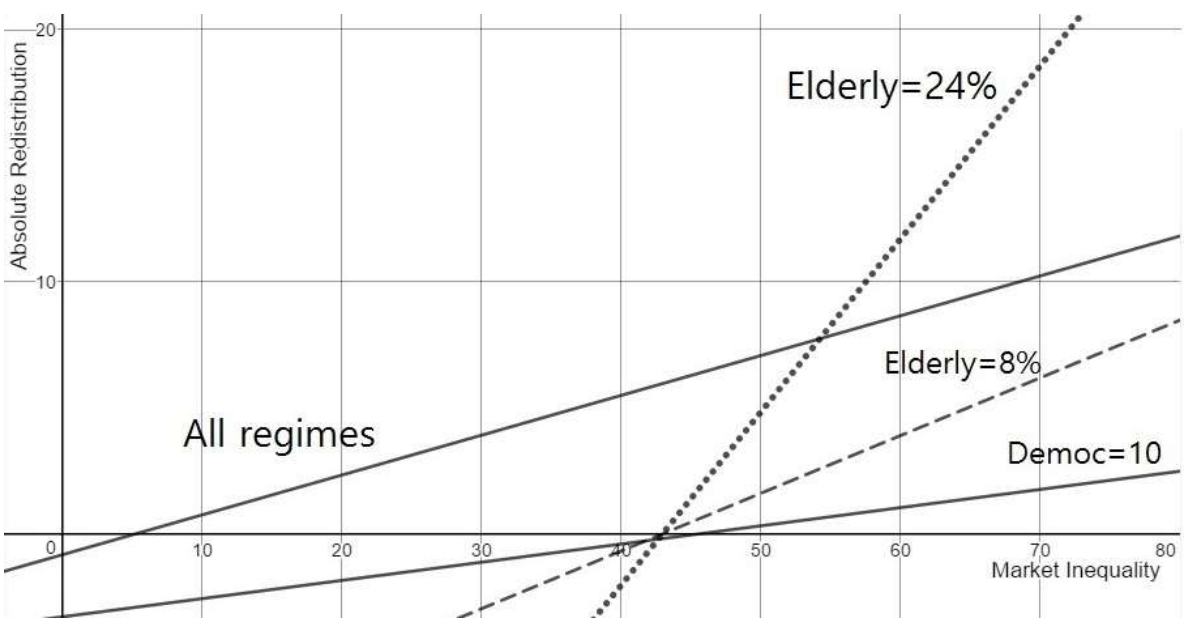
OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

None of the democracy measurements are found to be significant for either the base effect or the interaction term. However, the coefficient for *Inequality (market)* alone is significant in four out of five cases, suggesting that the relationship between inequality and redistribution operates similarly in all countries regardless of regime type.

Turning to the controls, *GDP per capita* is not significant, but *Elderly* is significant at the highest level of confidence for both its base effect and interaction with inequality. This suggests that countries with a large elderly population would redistribute less at a low level of inequality, but redistribute more at a high level of inequality.

The isolated effects of regression (1) are simulated in Figure 7 for comparison. The basic relationship between inequality and redistribution is indicated by *All regimes* and suggests that even without democracy, states are quite sensitive to inequality. For example, for a country with GDP per capita of $5000, if *Market inequality* is 45 (Gini coefficient), we expect *Absolute redistribution* (without effects of democracy and elderly) to be 6.26. At *Market inequality* of 60, redistribution goes up to 8.63.

Figure 7. Isolated effects of variables in main regression



Note: Effect of GDP per capita is not shown.

The effect of *Democ* is very weak (and not statistically significant). At *Market inequality* of 60, having a perfect *Democ* score of 10 would only add *Absolute redistribution* of 1.04 to the above example.

In contrast, at *Market inequality* of 60, the impact of an 8% elderly population is additional *Absolute redistribution* of 3.88. The impact of a 24% elderly population would be 11.65. [21] Considering the strong effect of *Elderly*, I run an additional test (Table 5) to determine if the ageing population exerts influence on redistribution only in democracy, or in all regimes. Consistent with the results in Table 4, none of the interactions with political measures are significant. This suggests that effects of *Elderly* are found in democracies and non-democracies alike.

4.3. Results of additional controls and robustness tests

Table A3 replaces country fixed effects with a lagged dependent variable. In line with the position that lagged DVs crowd out the effects of variables of interest in models of gradual change (Achen 2001), I find that only the coefficient of *Elderly*Inequality* remains significant.

Lindert (1996) raises the possibility of endogeneity. However, this is a greater problem for studies that claim a negative relationship between inequality and redistribution [22]. For example, if redistribution has a "feedback" effect in lowering inequality, the bias would be towards a negative relationship. Similarly, if strong unions simultaneously lower inequality and boost redistribution (as claimed by power resources theory), we would expect a negative bias. In other words, I find a positive relationship between inequality and redistribution in spite of any endogeneity present.

[21] An elderly population of 8% is the mean in my sample and describes many fast-growing developing countries like Brazil, China and Turkey. Only Japan hits a 24% elderly population in 2011, with Italy and Germany close behind.

[22] (Bassett, Burkett, and Putterman 1999; De Mello and Tiongson 2006)

Table 5. Effect of elderly population interacted with political measures on absolute redistribution

Democracy measure	Continuous		Dichotomous		
	(1)	(2)	(3)	(4)	(5)
Inequality (market)	0.159**	0.129*	0.179**	0.119*	0.159**
	(0.071)	(0.067)	(0.077)	(0.064)	(0.071)
GDP per capita	-0.327	-0.239	-0.368	0.186	-0.330
	(0.645)	(0.744)	(0.632)	(0.806)	(0.650)
Elderly	-1.409***	-1.399***	-1.387***	-1.575***	-1.413***
	(0.344)	(0.357)	(0.390)	(0.404)	(0.346)
Elderly*Inequality	0.033***	0.035***	0.032***	0.034***	0.033***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Elderly*Democ	-0.001				
	(0.009)				
Elderly*Political rights		-0.018			
		(0.019)			
Elderly*Multiparty-electoral			-0.004		
			(0.070)		
Elderly*Executive-competitive				-0.014	
				(0.048)	
Elderly*Party-competitive					-0.013
					(0.052)
Country FEs	Y	Y	Y	Y	Y
Year FEs	N	N	N	N	N
Countries	148	160	160	155	148
Observations	3476	3437	3108	3367	3476
R-squared	.916	.925	.910	.925	.916
R-squared (adjusted)	.912	.921	.905	.921	.912

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Furthermore, the use of country fixed effects to remove base levels and the resulting focus on change in redistribution partially deals with endogeneity issues. To dispel further concerns, I follow Houle (2016b) in running the main results with the linear generalised method of moments (GMM) of Blundell and Bond (1998) in Table A4. In the absence of good instrumental variables, GMM uses lags of the dependent variable as instruments and is suitable for unbalanced panels where the number of groups (countries) exceeds the time frame (years). (Roodman 2006) System rather than difference GMM is used to avoid the small sample bias associated with the persistence of the dependent variable over time.

(Heid, Langer, and Larch 2012) According to the recommendations of Roodman (2009), the number of instruments is kept below the number of groups by collapsing the instrument matrix.

Table A5 uses two-way fixed effects to control for worldwide economic shocks. Results are slightly different, with significant coefficients for *GDP per capita* and *Party-competitive*. However, none of the year dummies are significant. Also, tests with decade dummies (not shown) and a time variable (Table A6) deliver inconsistent and non-significant results. Thus, time effects are probably an over-specification.

Table A7 uses lead dependent variables to test if democracy may have a delayed effect on redistributive policy. It is difficult to determine how long the appropriate lag should be, but I present a 1-year lag on the logic that policy implementation may take a year, and a 5-year lag on the logic that the electoral cycle is seldom much longer than that. The 5-year lead DV generates interesting results, with *Elderly* losing significance in favour of *Party-competitive*. However, this is partly an artefact of the loss of sample size, as revealed by testing the basic model on the same observations (not shown). Unfortunately, the lack of complete data for a longer time frame makes it hard to test lagged effects conclusively.

Tests of additional political, economic and demographic controls (Tables A8 to A18) deliver mostly non-significant results in support of the main conclusion that *Elderly* drives redistribution. *Party-competitive*, which is the strictest measure of 'democracy', tends to show up at the lowest level of significance, suggesting that only 'high-quality' democracies may be able to differentiate themselves in terms of redistributive policy. Nevertheless, even these effects are small and inconsistent, and I can only conclude that *Party-competitive* may be worth further investigation.

Houle (2016b) finds a positive relationship between inequality and redistribution in a sample of 89 democracies. Tables A25 to A28 replicate his model with the same data sources, but add more than 40 non-democracies to the sample. The four tables test the model for combinations of lagged dependent variable, country fixed effects, absolute redistribution and relative redistribution. In general, the first column replicates Houle's

(2016b) original results[23], the second column extends the sample to non-democracies, the third column adds interaction terms and the fourth column substitutes the dichotomous *Democracy* (Cheibub, Gandhi, and Vreeland 2010) for the scalar *Polity2* (Marshall, Gurr, and Jaggers 2016).

Results for *Absolute redistribution* are consistent with my main results. *Polity2* and *Democracy* are not significant in any regression. Market inequality always has the correct sign and is significant in all models except (3) and (4) of Table A27, where it seems to be crowded out by the lagged DV and other variables. *GDP per capita* (logged) is always positive and significant only for the lagged DV model. *Elderly* is consistently positive if alone; when interactions are accounted for, the base effect is negative and the interaction is positive. Religion, government type and electoral system perform similarly to Houle (2016b).

Results for *Relative redistribution* are inconsistent. Column (3) of Table A27 is the only regression that finds *Polity2* to be significant, and *Elderly* is generally non-significant. As explained in section 3.1., I have reservations about the *Relative redistribution* measure, and will not attempt to draw further conclusions from these findings.

5. Discussion

5.1. Inadequacy of existing theories to explain redistribution

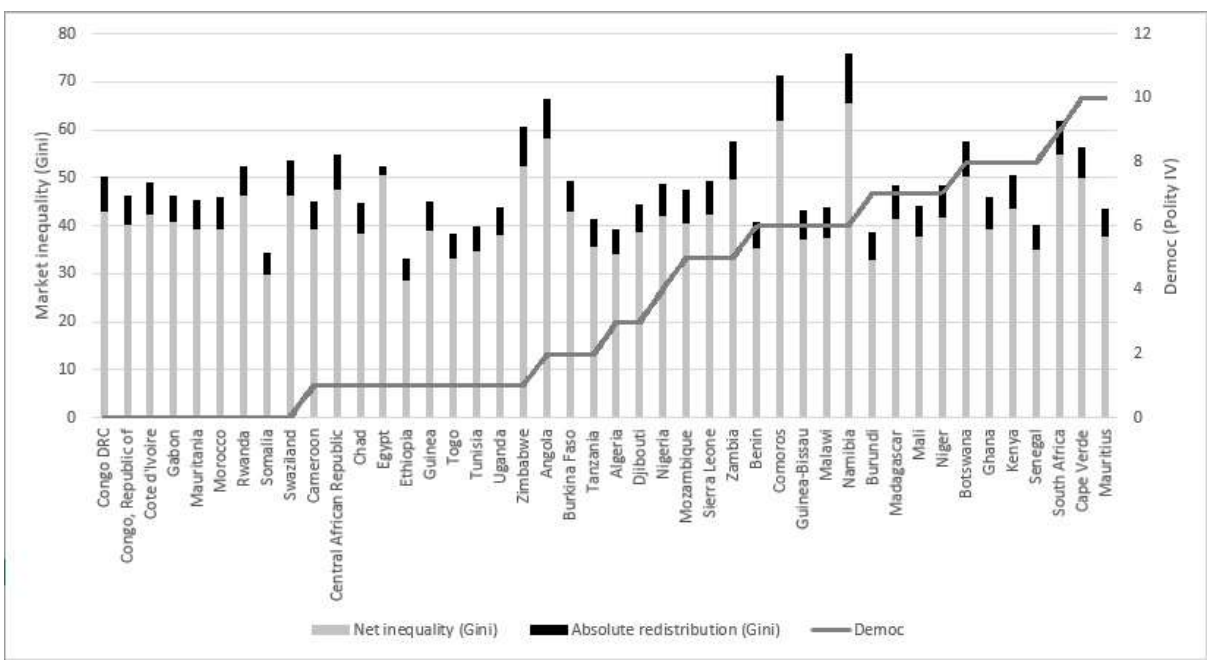
Given the weak and statistically insignificant effect of democracy, my results suggest that the median voter model is not very useful to explain redistribution, especially for a global sample including developing countries and non-democracies. In such case, what would be a more appropriate theory to support these findings?

[23] I was unable to replicate the results exactly because Houle (2016b) does not specify some of the decisions made in the construction of the dataset. However, the coefficients are very close. In Table 2 of Houle (2016b), the coefficients for Electoral turnout and % Elderly were swapped. It should be % Elderly that is significant.

A common objection to the median voter model comes from the 'Marxist' position that democracy is merely a façade to legitimise class structures. Dahl (1971) argues that economic resources translate to political resources while Lindblom (1977) points out that the rich can influence democracy by owning the mass media. Acemoglu and Robinson (2008) argue that elites circumvent democratic institutions to dominate policy making and block redistribution, while Albertus and Menaldo (2014) claim that "democracy is often captured by elites and may be no better than autocracy at levelling the playing field".

Unfortunately, the Marxist position explains why we expect democracies to fail to redistribute (like non-democracies), and not why non-democracies redistribute (like democracies). A snapshot of African countries illustrates the limitations of both the median voter and Marxist positions (Figure 8).

Figure 8. Inequality, democracy and redistribution in Africa, 2005



Sources: Marshall, Gurr, and Jaggers (2016) Polity IV; Solt (2016) SWIID 5.1

Contrary to the predictions of the median voter model, we do not see any consistent difference in redistributive policy between the least democratic regimes on the left and the most democratic regimes on the right. Also, contrary to the Marxist position, all regimes without exception have a progressive (pro-poor) redistribution policy, with most countries redistributing 5 Gini points or more. The only clear difference between countries is that those with the highest inequality (Zimbabwe, Angola, Comoros, and Namibia) redistribute the most.

In the following section, I take a brief look at why autocratic regimes might redistribute, beginning with a brief note on the available theory and supporting it with case studies.

5.2. Redistribution in autocracy

> *"Because men, when they receive good from him of whom they were expecting evil, are bound more closely to their benefactor; thus the people quickly become more devoted to him than if he had been raised to the principality by their favours…"*

Machiavelli (1515, 44-46) thus advises the man who becomes a prince "in opposition to the people" to "seek to win the people over to himself", even at the expense of the nobles who put him in power, because "the prince is compelled to live always with the same people, but he can do well without the same nobles". Weber emphasises the need of all states, even autocracies, for legitimacy, because "no regime can survive for long if it is based on force alone". (Lassman 2000, 88)

In this context, it is not so surprising that autocracies have been concerned about inequality and redistribution. For example, Fukuyama (2011, 304) details how peasant taxes were set far below the level of maximum revenue in Ming Dynasty China, and links this benevolence to the concept of the 'Mandate of Heaven' that legitimised the emperor. Fukuyama goes on to challenge Olson's (1993) median voter argument that autocracies would tax more heavily than democracies.

Wintrobe (2000) provides a welcome theoretical framework for this issue, arguing that autocracies stay in power through a combination of repression and loyalty. The two factors are imperfect substitutes, meaning that a regime can reduce the level of repression (and thus spend less on secret police) if it is able to raise the level of loyalty (by buying off part of the populace). The decisions of elites and circumstances of each country determine the 'policy mix' of repression and loyalty.

In this section, I present three examples of egalitarian policies under long-lasting autocratic regimes. Poland under Pilsudski and later the communists, Park Chung-hee's South Korea and the Philippines under Marcos make up a broad spectrum of autocracies that all had to generate legitimacy to survive. Through three rather varied forms of redistribution, I show that autocratic rulers do in fact 'market' their regimes to different constituencies of supporters, and that the median voter assumption that non-democracies do not redistribute does not hold up to scrutiny.

The statistical evidence in this section may not always match the definition of redistribution that I have used earlier. Nevertheless, it will be sufficient to illustrate the motivations of autocrats for taking an interest in inequality.

The welfare state in Poland, 1925-1938 and 1971-1982

Poland celebrates the 100th anniversary of its independence in 2018. The country has spent nearly 60 of those years under autocratic rulers, most of whom were communist. At the same time, Poland has one of the most advanced and generous welfare states in the world. This makes it an ideal study to understand the causes of redistribution in the former communist bloc.

Workers in Prussian territories had been covered by the legendary Bismarckian welfare state before Polish independence. But the origins of the modern welfare state in Poland can be pinned to 1933, when the authoritarian Piłsudski regime created the Zaklad Ubezpieczen Spolecznych (ZUS), a centralised organisation that has administered social insurance continuously, even during Nazi occupation, up till today.

On the backs of a military coup in 1926, a rigged election in 1930 and the onset of the Great Depression in 1933, Piłsudski's government arguably faced a need to consolidate its legitimacy. The regime "viewed the welfare state not just as a political necessity but as a showcase of national success, palpable evidence of the capacity of the young Polish state and its committed administrative apparatus to alleviate poverty and relive socioeconomic tensions simultaneously" (Inglot 2008, 82). These were not empty promises; from 1925 to 1938 total pension coverage rose by 292% and accident insurance by 80% (Inglot 2008, 89), making the welfare state a cornerstone of Polish national identity.

In 1939, Poland fell to German occupation and experienced communist takeover after the war. The welfare state went through cycles of expansion and cutback under successive leaders. In 1970, Gomulka's "conservative retrenchment" of welfare benefits led to two months of labour unrest that forced his retirement. (Inglot 2008, 163) Gierek's new administration "combined violent repression of the strikes and demonstrations with emergency social spending for wages and worker benefits" (Inglot 2008, 164), as predicted by Wintrobe (2000). 7-8 billion *zloty* was reserved for low income workers, large families and pensioners, while working mothers were the target of another expansion.

Breslauer (1978) and Inglot (2008, 165) place the resurgence of the Polish welfare state in the context of the Soviet bloc's new "consumer-oriented welfare authoritarianism", under which the "social contract" between regime and society was a "major pillar of regime stability". While we do not have data on the pro-poor bias of specific welfare policies, Solt's (2016) estimates indicate that Poland redistributed 13.84 Gini points in 1972, well ahead of the mean of 8.45 for all regimes in our sample.

The Polish case illustrates that redistribution was a familiar method of legitimation in the 'policy toolbox' of autocratic communist regimes. Furthermore, we observe that redistribution was not simply an economic or demographic issue. It was a direct result of political decisions in response to regime crises.

In the following case, we look at redistributive motivations in one of the most staunchly anti-communist autocracies, Park Chung-hee's South Korea.

The Saemaul Undong in South Korea, 1971-1979

Rather than a concrete movement that was conceptualised and executed, Park Chung-hee's Saemaul Undong (SMU), or New Village Movement, might be best described as a branding concept (Park 2009, 114) that was used by the South Korean state to mobilise society for development. Considering that the SMU in 1976 took up 9% of the national budget (Douglass 2013, 20), spanning rural infrastructure, high-yield rice, fertilizer and grain subsidies, and factories, it is impossible to cover its full scope here. What we interested in is the extent to which the SMU addressed inequality and redistribution, and the regime's motivations for doing so.

The first claim often made is that the SMU addressed the rural-urban divide that had emerged during the 1964-1971 period of rapid industrialisation. The ratio of rural to urban household income rose from 0.67 in 1970 to 1.00 in 1976 (Kwon 1997, 194). This was assisted by subsidies for fertilizers and purchase of rice and barley at above-market prices, with a combined cost of more than 2% of GDP (Ho 1979, 651).

The second claim is that the SMU raised the living standards of the population. During the abovementioned period of 1970 to 1976, urban household tripled and rural household income quadrupled. Absolute poverty[24] fell from 40.9% in 1965 to 14.8% in 1976 and 9.8% in 1980 (Seo et al. 1981, 102).

How did all this affect the actual income structure? There are doubts that the schemes benefited the poorest tier of society, because richer farmers with larger plots of land and a higher proportion of marketisation were better able to take advantage of fertilizer and grain subsidies. Brandt (1981, 494) asserts that the poorest 15-30% of farmers were landless and thus were left behind by the SMU's rural modernisation effort. Furthermore, the narrowing of the rural-urban income gap may have been assisted by the

[24] According to a monthly poverty line of 4,633 won for urban households and 3,879 won for rural households, at 1973 prices.

migration of poor farmers to the cities in search of jobs[25]. Relative poverty, defined as households living below one third of the average income, rose from 12.2% in 1965 to 13.3% in 1980 (Seo et al. 1981, 103).

The definition of redistribution used in typical Varieties of Capitalism literature does not fare well in evaluating the SMU. Developmental state-era South Korea basically resembled its role model, Japan, in the use of "functional equivalent" (Estévez-Abe 2008) policies like agricultural subsidies in place of official welfare programs. The construction of more than 87,000 km of roads and connection of nearly 2 million households to the power grid (Ban 1981, 303, 318) would have affected farm productivity and income indirectly. An interventionist state was the secret of the low welfare spending, low inequality paradox.

Why did Park choose to divert a huge proportion of government spending to agriculture when a rapid industrialisation approach had worked for him in the 60s? As with Poland's Piłsudski, the answer seems to be political consolidation. Park, originally a 'poor man's hero' who staged a coup against corrupt urban elites in 1962, saw his rural support ebb during the first and second Five Year Plans, which diverted agricultural surplus into industrial investment. The farming heartland of Jeolla province, which had supported Park by wide margins in the 1963 election, switched sides in the 1967 election and delivered a resounding opposition vote in 1971. (Nohlen, Grotz, and Hartmann 2001)

Determined to avoid the risk of another election, Park passed the autocratic Yushin Constitution of 1972, abolishing direct elections for the presidency and removing the limit on re-election while giving himself powers to appoint one-third of the National Assembly. Facing mounting discontent (Park 2009, 115), Park intensified the SMU and turned it into a form of "state populism" based on "economic equality and egalitarianism" (Han 2004, 80).

[25] The rural population, defined as those living in *eup* and *myeon* administrative districts, fell from 18 million in 1970 to 16 million in 1980, while the urban population rose from 13 million to 21 million (Korean Statistical Information Service, accessed at http://kosis.kr/ on 29 April 2017).

In the South Korean case, we see that concern for inequality is controversially linked not to democratisation but a swing towards autocracy. As predicted by developmental state theory, a loss of the electoral mandate forces would-be autocrats to seek legitimacy in an "overarching social project" that is "above and beyond themselves". (Johnson 1999, 52-53)

Of course, developmental states represent only a fraction of autocracies. In the next case we try to identify motivations for redistribution in a "predatory state" (Evans 1989), where autocrats attempt to enrich themselves at the expense of the populace.

The Kilusang Kabuhayan at Kaunlaran in the Philippines, 1981-1983

The Guinness World Records lists Ferdinand Marcos for "greatest robbery of a government" with an estimated US$5-10 billion[26]. Hutchcroft (2011) calls him a "reverse image" of Park Chung-hee because he rose to power under similar circumstances but left a legacy of "disastrous economic predation" that couldn't be any more different from Park's 'miracle on the Han'. The Philippines, then, is an appropriate case study to find out what redistributive motives a thoroughly corrupt and patrimonial regime could possibly have.

The Kilusang Kabuhayan at Kaunlaran (KKK), or Movement for Livelihood and Progress, was inaugurated by Marcos in 1981 shortly after the end of a decade martial law. As a rural development scheme that was "two parts private initiative and one part government aid" (Armstrong 1983), it was remarkably comparable to South Korea's SMU. US$240 million in government funds over two years were channelled through local banks as low-interest loans to kickstart cottage industries such as recycling wood chips and rearing bullfrogs. In its first year, the KKK funded 5,213 projects and created 160,170 jobs (Solidum 1983, 238). It also had redistributed 737,512 hectares of state land to farmers as of 2005 (Borras 2006, 81).

[26] Accessed at http://www.guinnessworldrecords.com/world-records/65607-greatest-robbery-of-a-government on 29 April 2017.

How egalitarian was the KKK? It was said to be targeted at "impoverished groups, including fishermen, landless farmers, and urban slum dwellers", with two-thirds of the projects in rural areas (Armstrong 1983). However, loan applications were approved by local mayors, making it vulnerable to corruption. Reports from remote South Mindanao even claimed that rebels were using the money to buy weapons (Solidum 1983, 239).

The most transparent aspect of the KKK was perhaps Marcos' motives for funding it. The launch in 1981 coincided with the country's first presidential election since 1969, and a budget increase in 1983 came before parliamentary elections in 1984 (Silliman 1984, 153). The KKK itself was parked under Imelda Marcos' Ministry of Human Settlements, and staffed by members of the ruling party.

Unfortunately for Marcos, the KKK was too little too late, and he was ousted by public protest in 1986.

The role of redistribution in autocracy: Conclusions from three case studies

Several common trends can observed from the Polish, South Korean and Filipino examples. First, autocrats experience threats to regime stability, and sometimes appear more vulnerable in this regard than the democratic governments that they replace. Lacking voters' mandate in Poland and South Korea, and suspected of vote fraud in the Philippines, autocrats often turned to egalitarian projects to legitimate their rule.

Second, redistributive policies were not automatic bureaucratic responses to demographic change, but reflected intensely political decisions based on ground sentiment. Autocrats often zigzagged between pro-poor and pro-rich policies in an attempt to please both camps, and sometimes redistribution was more charade than substance. Nevertheless, even by merely pretending to redistribute, autocrats implicitly recognised a social contract basis for their rule beyond raw force of arms.

Third, as predicted by Wintrobe (2000), redistribution often went hand in hand with repression. In this respect, autocracy may differ from democracy, although the results may not be too different. Just as democratic political parties appeal to certain groups of voters

at the expense of others, autocracies also find it expedient to reward some and punish others.

Given the reasons above, it is perhaps not such a surprise that autocracies are concerned with inequality and redistribution. While the precise politics of redistribution under autocracy remains relatively unexplored, this section has at least established probable motivations for egalitarian policies even in the absence of electoral democracy. The next section will explore possible reasons for the massive statistical impact of population ageing on redistribution.

5.3. The impact of population ageing

In the main regression results (Table 4), I found that the age structure of the population has a greater impact on redistribution than any other control variable. Ageing affects not only the base level of redistribution but also the sensitivity of redistribution to inequality (Figures 9 to 11).

Although this paper set out to test the impact of democracy, not ageing, on redistribution, the strong statistical significance of *Elderly* demands further explanation. What is the precise impact of ageing on redistribution, and through what mechanism does it have an effect?

To illustrate the role of ageing in changing the structure of inequality and redistribution, I present country-level data for Japan, one of the most dramatically ageing populations in the world. Following that, I summarise the findings of recent literature on the causal mechanism behind recent growth in OECD public pension spending.

Figure 9. Sensitivity of redistribution to inequality in relatively young countries

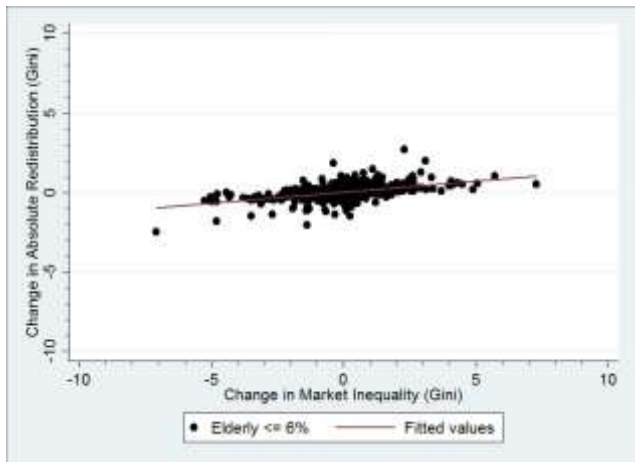


Figure 10. Sensitivity of redistribution to inequality in moderately ageing countries

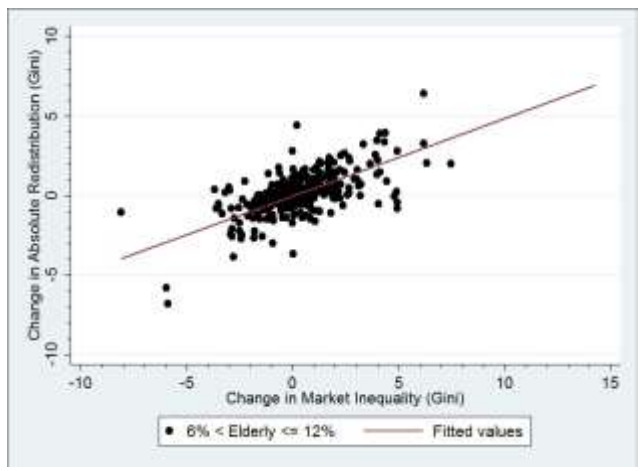
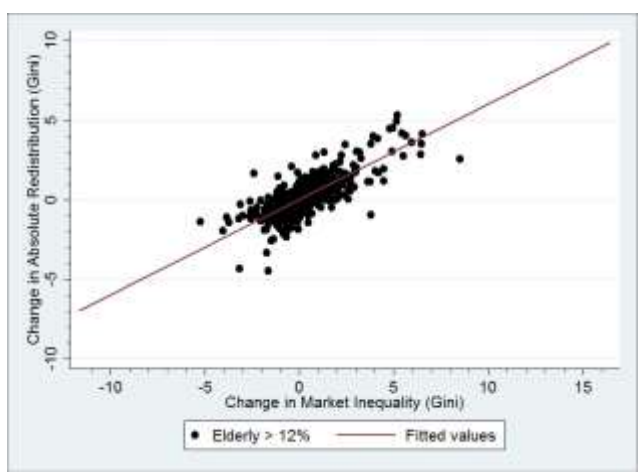


Figure 11. Sensitivity of redistribution to inequality in highly ageing countries



Sources for Figures 9 to 11: World Bank (2016), Solt (2016)

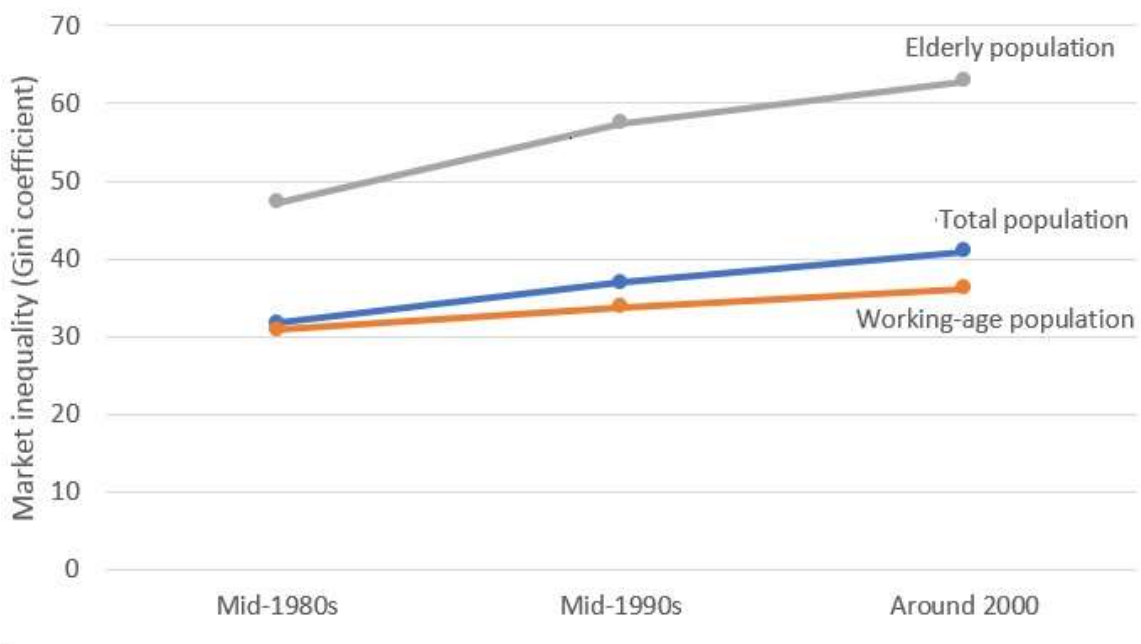
The impact of Japan's ageing population on redistribution and pensions

Japan is known to be one of the more egalitarian OECD countries, but has nevertheless experienced rising *Market inequality* with the rest of the pack, from a Gini coefficient of 30 in the early 1980s to 45 in 2011. This has been accompanied by increasing levels of *Absolute redistribution*, topping 15 for the entire period after 2000. (Solt 2016)

Both trends have been driven mostly by the population above 65 years of age, which grew from 9% in 1980 to 24% in 2011 (World Bank 2016). The working-age population of 18-65 saw only a slight increase in inequality and hardly any in redistribution for the period 1980-2000 (see Figures 12 and 13).

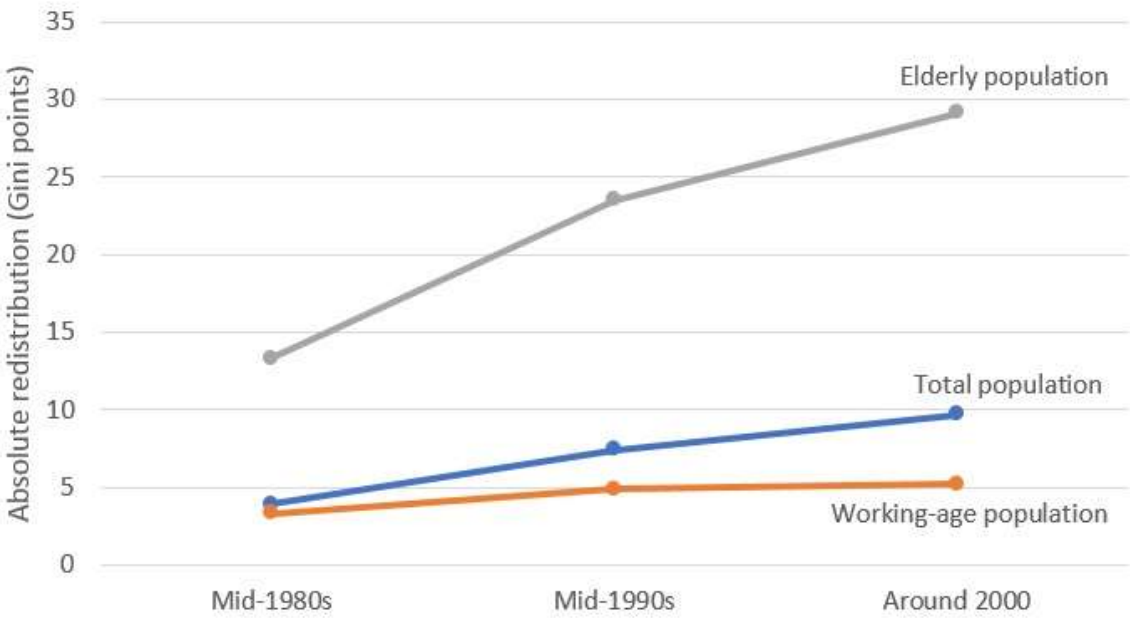
Data on social spending corroborates the claim that most of the increase in redistribution is going to the elderly. Pensions overtook medical spending in 1990 to become the most expensive programme, and cost 15% of national income in 2011 (see Figure 14).

Figure 12. Income inequality in Japan, 1980-2000



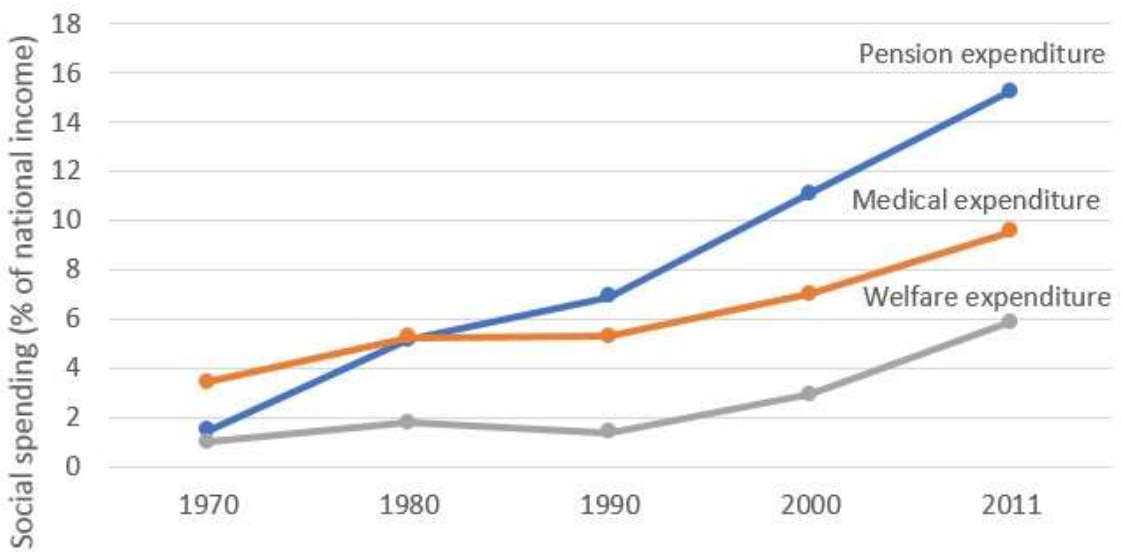
Source: Jones 2007, 8

Figure 13. Income redistribution in Japan, 1980-2000



Source: Jones 2007, 15

Figure 14. Social spending in Japan as a proportion of national income, 1970-2011



Source: Ozawa 2012, 21

The Japanese data, then, matches my regression findings that ageing is strongly correlated to redistribution. The question that remains is regarding the causal mechanism of this relationship. Do the elderly in larger numbers exert increasing political power, as predicted by median voter theory, and demand more generous pensions? Or is the observed rise in redistribution merely an automatic effect of welfare policies that were established in the past?

Reasons for the rise in OECD public pension spending

An increasingly relevant form of median voter theory is the 'grey power' or 'gerontocracy' thesis, which argues that elderly populations will use their growing electoral strength to enact more generous redistributive policies such as pensions and medical care. (Pampel 1994; Galasso 2006) Such a scenario would inevitably lead to an unsustainable fiscal situation as the old age dependency ratio rises. To stave off disaster, OECD countries need to retrench their pension systems 'before it is too late' (IMF Research Department 2004, 165). For example, Sinn and Uebelmesser (2002) argue that once voters aged 50 and older form the majority in Germany, it will be impossible to push through the necessary legislation, making 2016 the country's "last chance" for pension reform.

Some research on opinion surveys seems to support the gerontocracy thesis (Preston 1984). Using the 1996 International Social Survey Programs (ISSP) Role of Government III Data Set covering 14 OECD countries, Busemeyer, Goerres, and Weschle (2009) find that retirees in almost all countries prefer pension spending to education.

However, analysis of actual public spending finds little support for gerontocracy. Tepe and Vanhuysse (2009) show that although average OECD-18 pension expenditure rose from 5.5% to 6.4% of GDP in the period 1980-2002, expenditure per elderly person fell slightly. This proves that at the cross-national level, any rise in total spending is due to a larger number of recipients rather than any increase in the generosity of the pension policy.

This does not mean that ageing has no impact on the political process of individual countries. Tepe and Vanhuysse (2009) admit that an elderly population may make pension

cutbacks more difficult to accomplish. At the same time, ageing can set off "alarm bell signals" (Vanhuysse 2012) that emphasise the need for urgent political action. Sciubba (2012, as cited in Vanhuysse 2012) finds that three of the oldest countries, Germany, Italy and Japan, have recently passed pension cuts.

My regression results broadly agree with the non-gerontocracy camp. If political variables do not make any difference in a cross-country regression, the observed correlation between elderly population and redistribution is likely to be an issue of scale (number of recipients) rather than electoral power (influencing generosity of pensions). Meanwhile at the domestic level, the process of determining welfare policy is complex and must be seen against the background of state legitimacy and weakness. Autocracies like Poland may find pension expansion an expedient way to boost popular support in a crisis, while democracies like Japan may find the political climate ripe for pension retrenchment at certain points in time.

5.4. Conclusion

This paper makes three contributions.

First, although I do not directly dispute the workings of the median voter mechanism, I present statistical evidence that challenges the dominance of median voter theory in the study of inequality and redistribution. Democratic electoral politics may not be the most useful explanation for egalitarian policies. In particular, my findings are critical of research that uses median voter assumptions to conclude that democracies redistribute more than non-democracies.

These findings may appear idiosyncratic in the face of overwhelming theoretical literature for the superiority of electoral democracy in reducing inequality. However, this paper joins a growing list of comparative empirical tests that debunk that assumption. It has already been known that Soviet bloc autocracies performed comparably to Western democracies for social security expenditure as a proportion of GDP (Castles 1986). More recently, Mulligan, Gil and Sala-i-Martin (2004) found that democracies and non-

democracies did not have different economic and social policies, for a sample of 131 countries from 1960-1990. Ross (2006) showed that democracy had no significant effect on the condition of the poor, as proxied by infant and child mortality, in a global sample of states from 1970-2000. Scheve and Stasavage (2011) demonstrated that democracy had no effect on the taxation of inherited wealth for 19 states from 1816-2000. In a paper that complements my findings, Slater, Smith, and Nair (2014) confirm that post-coup regimes did not significantly change taxes on income and capital gains profits as a share of GDP, for a sample of 139 countries. Additionally, they use a case study of the ASEAN-5 (Indonesia, Malaysia, Singapore, Thailand and the Philippines) from 1945 to 1990 to show that right-wing anti-communist dictatorships were often more tax-progressive than the weak democracies of the developing world. Meanwhile, Albertus (2015) presents Latin American evidence that autocracies outdid democracies in land redistribution.

Nevertheless, this paper is the first to attempt to test the relationship between income inequality and income redistribution for a global sample of democracies and non-democracies. My findings are necessarily tentative and should be confirmed by further tests using regional datasets, which have higher comparability. Furthermore, this paper tests only a very narrow definition of redistribution that should be supplemented by more rigorous examinations of changes in the income structure (such as by quintiles) and non-cash transfers (such as education) when such data becomes available.

Second, considering the statistical evidence that non-democracies are also sensitive to inequality, I use case studies of Poland, South Korea and the Philippines to illustrate why radically different forms of autocracy may be motivated to redistribute. Redistribution under autocracy is a neglected topic that may prove useful to our understanding of redistributive politics as a whole. For example, the post-communist welfare states of Eastern Europe cannot be studied without an analysis of their autocratic history.

Third, my results show that redistribution is strongly connected to population ageing. Drawing on a case study of Japan and prior research for OECD countries, I show

that individual pension generosity has not increased even though total spending is on the rise. This suggests that redistributive trends reflect the automatic effect of welfare policies rather than the growing political power of elderly voters.

The central story here is that successful states generally find a way to deal with inequality, no matter their political orientation. Although democracy may seem an elegant explanation for redistribution, prior literature may have overplayed its effect. Going forward, my suggestion is that inequality and redistribution can be better explored through the lens of state legitimation and the social contract. This provides a unified framework to study the similarities and differences of regime types, and will encourage the use of previously untapped data on autocracies.

For example, my findings suggest that inequality in China will be a critical emerging issue. Market inequality in China nearly doubled from a low (Gini coefficient) of 27 in 1982 to 51 in 2002, yet Beijing shows little interest in a welfare state, with redistribution almost non-existent. (Solt 2016) With China ageing 'ahead of the curve' thanks to its one-child policy, we can only expect that it will be hit with a double crisis of slower growth and severe inequality. (Cai and Cheng 2014; Liu and Sun 2016) Will the CCP make egalitarian concessions to shore up autocratic legitimacy, like Gierek's Poland and Park's South Korea, or will it seek to pass the buck to voters in top-down democratisation, a la Taiwan or Myanmar? Failure to choose either option may lead to an unceremonious Marcos-style exit.

Appendix

1. Notes on dataset construction

This section details the observations that were dropped from Solt's (2016) SWIID 5.1 to arrive at the dataset used for most of the analysis.

All territories that are not currently listed as UN member-states were dropped, mainly due to the lack of elderly population data from the World Development Indicators. This includes territories that are not recognised as independent countries, such as Hong Kong and Taiwan, as well as formerly existing countries like the USSR. Andorra and Dominica were dropped for similar reasons. The Kyrgyz Republic was dropped due to a double-counting mistake (Frederick Solt, personal communication, February 1, 2017), keeping Kyrgyzstan which is the same country.

Countries that experienced territorial break-up or merger affecting more than 1% of the population, such as Germany, Pakistan, Ethiopia and Vietnam, had observations dropped before the event. Therefore, East Germany and West Germany were not considered for analysis, but Germany after 1990 was included. Similarly, Pakistan before 1972 was dropped, but Pakistan and Bangladesh were both included from 1972 onwards. This decision reflects three considerations. First, territorial change results in population change, which would inevitably affect income inequality in a way that cannot be easily controlled for. Second, grouping predecessor and successor states separately, with their own country dummies, would violate the assumption that errors are grouped by country, and possibly introduce a spurious correlation. Third, data before territorial change was scarce for most countries.

Indonesia is a special case where I assume that the exit of East Timor in 2002 did not significantly affect income inequality due to its small population.

Solt (2016) includes country-year observations for several territories, mostly USSR successor states, before they gained political independence. These observations are dropped because polity information would not be available.

2. Distortion in imputed *Relative redistribution* measure

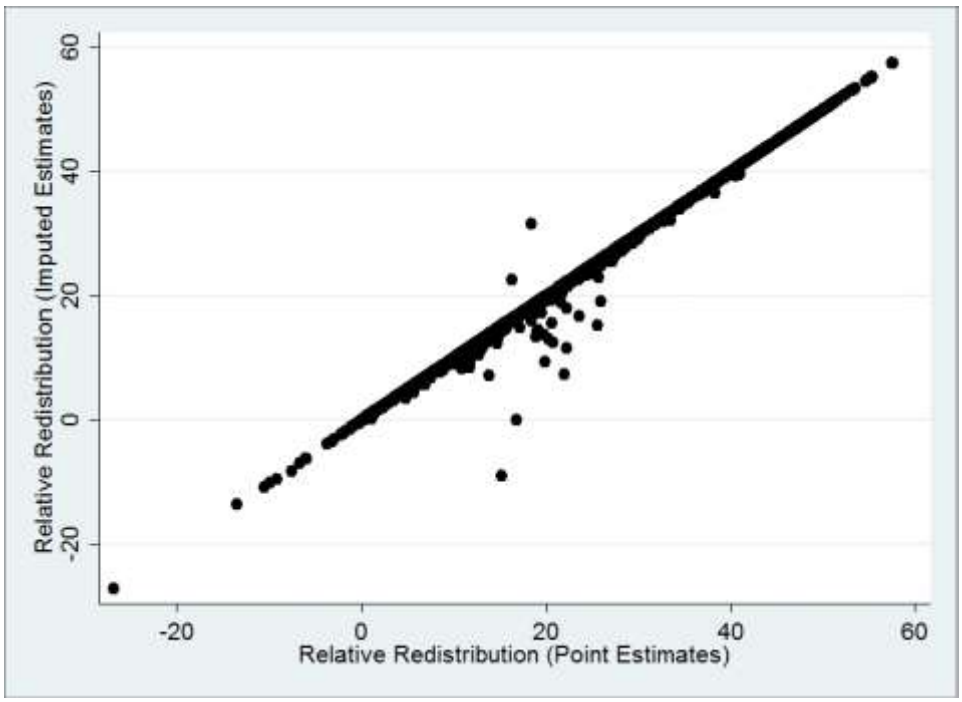
As discussed in section 3.1. of the main text, it is possible to use a measure of *Relative redistribution* as the dependent variable, calculated as *Absolute redistribution* divided by *Market inequality*. It can be argued that *Relative redistribution*, being a percentage measure, is a more intuitive representation of a government policy that seeks to ameliorate inequality according to its severity.

However, the combination of Solt's (2016) multiple imputation process and the variable transformation for *Relative redistribution* introduce distortion from the original point estimates of redistribution. The mathematical issue is similar to the problem of multiple imputation of squared terms outlined by Vink and Buuren (2013). Outlier imputations are originally meant to represent uncertainty in the estimate, but their magnitude is amplified by the transformation whereby *Absolute redistribution* is divided by *Market inequality*. These outliers then disproportionately influence the final regression output which is the combination of individually regressed imputations according to Rubin's (1987) rules.

This distortion can arguably be ignored for a restricted sample of reliable observations, where the variance of imputations is low. However, when we include the full set of developing countries, the error is large enough to change the sign of *Absolute redistribution* from positive to negative. For example, the point estimate for *Absolute redistribution* in Kenya in 1960 is 10.28, and the point estimate for *Market inequality* is 67.49. This should yield *Relative redistribution* of 15.24% but the mean of imputations is -8.91%.

Figure A1 shows that this is not an isolated occurrence. Azerbaijan, Cuba, Jamaica and Turkmenistan all show distortion of more than five percentage points.

Figure A1. Distortion in imputed estimates of *Relative Redistribution*



Source: Solt (2016) SWIID

Figure A2. Residual-versus-fitted plot for regression (1) of Table 4 (point estimates)

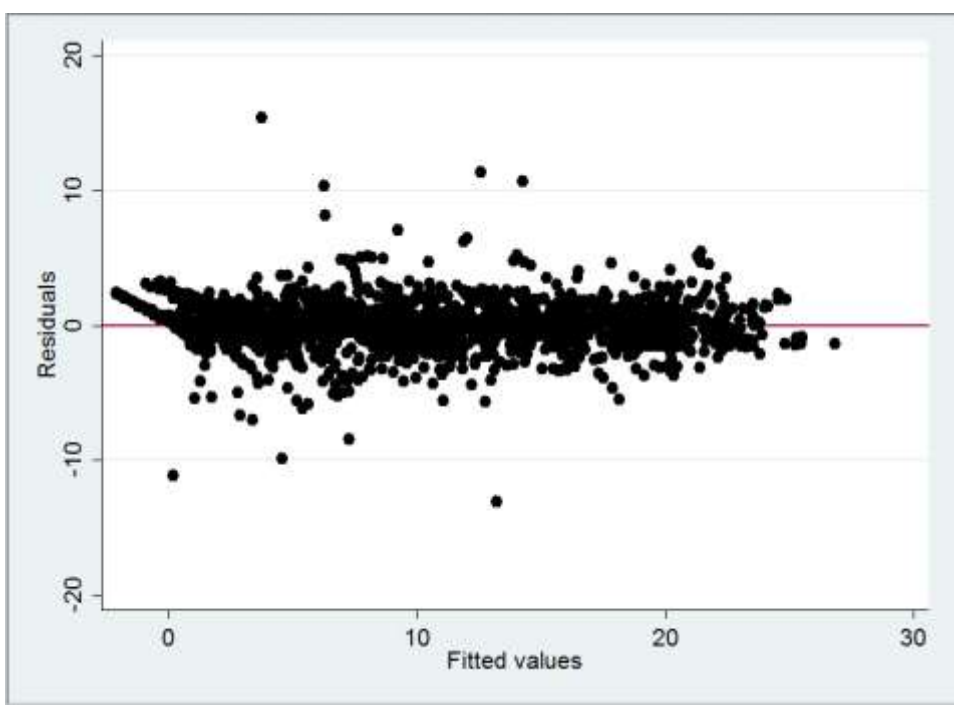


Table A1. Summary statistics for main dataset (Tables 4, A3 to A20)

	Obs	Mean	SD	Min	Max	Source
Political						
Democ	3589	5.98	3.92	0	10	Marshall et al. (2016) Polity IV
Autoc	3589	1.67	2.70	0	10	Marshall et al. (2016) Polity IV
Political rights	3532	4.90	2.05	1	7	Freedom House (2016)
Civil liberties	3532	4.81	1.74	1	7	Freedom House (2016)
Party-competitive	3589	0.31	0.46	0	1	Marshall et al. (2016) Polity IV
Multiparty-electoral	3227	0.77	0.42	0	1	Cheibub et al. (2010) DD
Alternation-constitutional	3227	0.61	0.49	0	1	Cheibub et al. (2010) DD
Suffrage-electoral	3090	0.61	0.49	0	1	Boix et al. (2012)
Legislative-competitive	3474	0.73	0.44	0	1	Cruz et al. (2016) DPI
Executive-competitive	3474	0.69	0.46	0	1	Cruz et al. (2016) DPI
Regime age (Polity)	3323	2.74	1.23	0	5.32	Marshall et al. (2016) Polity IV
Regime age (DD)	3227	2.86	1.17	0	4.93	Cheibub et al. (2010) DD
Regime age (Boix)	3096	3.09	1.24	0	5.34	Boix et al. (2012)
Government						
Parliamentary democracy	3227	0.28	0.45	0	1	Cheibub et al. (2010) DD
Presidential democracy	3227	0.20	0.40	0	1	Cheibub et al. (2010) DD
Semi-presidential democ.	3227	0.13	0.34	0	1	Cheibub et al. (2010) DD
Parliamentary regime	3415	0.39	0.49	0	1	Cruz et al. (2016) DPI
Presidential regime	3415	0.52	0.50	0	1	Cruz et al. (2016) DPI
Semi-presidential regime	3415	0.09	0.28	0	1	Cruz et al. (2016) DPI
Communist	3227	0.04	0.20	0	1	Cheibub et al. (2010) DD
Electoral						
Majoritarian democracy	3658	0.22	0.42	0	1	Bormann & Golder (2013)
Mixed-member democracy	3658	0.10	0.30	0	1	Bormann & Golder (2013)
Proportional democracy	3658	0.37	0.48	0	1	Bormann & Golder (2013)
Plurality regime	3415	0.58	0.49	0	1	Cruz et al. (2016) DPI
Proportional regime	3432	0.58	0.49	0	1	Cruz et al. (2016) DPI
Parliamentary turnout	3746	0.58	0.26	0	1.43	International IDEA (2016)
Presidential turnout	3746	0.32	0.34	0	1.16	International IDEA (2016)

Table A1 (continued) Summary statistics for main dataset (Tables 4, A3 to A20)

	Obs	Mean	SD	Min	Max	Source
Economic						
Absolute redistribution	3746	8.45	6.08	-10.97	26.89	Solt (2016) SWIID 5.1
Inequality (market Gini)	3746	45.66	7.89	18.53	76.89	Solt (2016) SWIID 5.1
GDP per capita	3602	8.46	1.54	5.10	11.61	World Bank (2016) WDI
Reserves per capita	3529	5.53	1.91	-2.54	11.10	World Bank (2016) WDI
Population	3746	16.29	1.65	11.05	21.03	World Bank (2016) WDI
Trade	3573	0.77	0.52	0.05	4.40	World Bank (2016) WDI
Growth	3582	0.04	0.05	-0.50	0.89	World Bank (2016) WDI
Inflation	3445	0.37	4.75	-0.36	244.11	World Bank (2016) WDI
Demographic						
% Elderly	3746	8.08	4.98	1.13	23.59	World Bank (2016) WDI
Urban	3746	0.56	0.23	0.05	1	World Bank (2016) WDI
Primary educated	3341	0.48	0.19	0.02	0.86	Barro & Lee (2013)
Secondary educated	3341	0.29	0.19	0	0.85	Barro & Lee (2013)
Tertiary educated	3341	0.07	0.06	0	0.39	Barro & Lee (2013)
Catholic (WRD)	3746	0.32	0.35	0	0.98	World Religion Database (2017)
Muslim (WRD)	3746	0.19	0.33	0	1	World Religion Database (2017)
Protestant (WRD)	3746	0.14	0.21	0	1	World Religion Database (2017)
Catholic (Gandhi)	3725	0.38	0.38	0	0.99	Gandhi (2004) DDEDS
Muslim (Gandhi)	3725	0.18	0.33	0	1	Gandhi (2004) DDEDS
Protestant (Gandhi)	3725	0.16	0.25	0	0.97	Gandhi (2004) DDEDS
Ethnic fractionalisation	3698	0.40	0.25	0	0.93	Alesina et al. (2003)
Linguistic fractionalisation	3629	0.36	0.28	0	0.92	Alesina et al. (2003)
Religious fractionalisation	3719	0.43	0.24	0	0.86	Alesina et al. (2003)
Ethnic diversity	3724	0.27	0.23	0	0.82	Gandhi (2004) DDEDS
Religious diversity	3725	0.28	0.23	0	0.84	Gandhi (2004) DDEDS

Table A2 Notes on variables for main dataset (Tables 4, A3 to A20)

	Notes
Political	
Democ	'Democ'. Interruption, interregnum and transition coded 0.
Autoc	'Autoc'. Interruption, interregnum and transition coded 0.
Political rights	Inverse.
Civil liberties	Inverse.
Party-competitive	'Parcomp'=5. Stable and secular party competition.
Multiparty-electoral	Multiple parties in legislature and elected executive.
Alternation-constitutional	'Democ'. Adds alternation and constitutionality requirements.
Suffrage-electoral	'Democ'. Majority male suffrage. "Free and fair" elections.
Legislative-competitive	'Liec'=7. Largest party got less than 75% of seats.
Executive-competitive	'Eiec'=7. Executive got less than 75% of votes.
Regime age (Polity)	Log of 'Durable'. Age of regime since 1800.
Regime age (DD)	Log of 'Agereg'. Age of regime since 1870.
Regime age (Boix)	Log of 'Democ_duration'. Age of regime since 1800.
Government	
Parliamentary democracy	'Regime'=0.
Presidential democracy	'Regime'=2.
Semi-presidential democ.	'Regime'=1.
Parliamentary regime	'System'=2. Legislature elects and recalls chief executive.
Presidential regime	'System'=0. Chief executive unelected or can veto/dismiss legislature.
Semi-presidential regime	'System'=1. Legislature elects but cannot recall chief executive.
Communist	'Comm'. Ruler is Communist Party leader.
Electoral	
Majoritarian democracy	'Legislative_type'=1. Dictatorships (Cheibub et al., 2010) coded 0.
Mixed-member democracy	'Legislative_type'=3. Dictatorships (Cheibub et al., 2010) coded 0.
Proportional democracy	'Legislative_type'=2. Dictatorships (Cheibub et al., 2010) coded 0.
Plurality regime	'Plurality'=1. Non-competitive regimes ('NA') coded 0.
Proportional regime	'Pr'=1. Non-competitive regimes ('NA') coded 0.
Parliamentary turnout	Votes over voting age population. Most recent observation.
Presidential turnout	Votes over voting age population. Most recent observation.

Table A2 (continued) Notes on variables for main dataset (Tables 4, A3 to A20)

	Notes
Economic	
Absolute redistribution	100 imputations. Summary statistics provided for point estimate.
Inequality (market Gini)	100 imputations. Summary statistics provided for point estimate.
GDP per capita	Log of 'NY.GDP.PCAP.KD'.
Reserves per capita	Log of 'FL.RES.TOTL.CD' over population.
Population	Log of 'SP.POP.TOTL'.
Trade	'NE.TRD.GNFS.ZS'. Trade over GDP.
Growth	'NY.GDP.MKTP.KD.ZG'.
Inflation	'FP.CPI.TOTL.ZG'.
Demographic	
% Elderly	'SP.POP.65UP.TO.ZS'. 65 years and above.
Urban	'SP.URB.TOTL.IN.ZS'. Urban population.
Primary educated	Linear interpolation/extrapolation from 5-year intervals.
Secondary educated	Linear interpolation/extrapolation from 5-year intervals.
Tertiary educated	Linear interpolation/extrapolation from 5-year intervals.
Catholic (WRD)	Catholics over population. Inter/extrapolated from 4 observations.
Muslim (WRD)	Muslims over population. Inter/extrapolated from 4 observations.
Protestant (WRD)	Protestants over population. Inter/extrapolated from 4 observations.
Catholic (Gandhi)	Catholics over population. Time-invariant. Observation in 1993/4.
Muslim (Gandhi)	Muslims over population. Time-invariant. Observation in 1993/4.
Protestant (Gandhi)	Protestants over population. Time-invariant. Observation in 1993/4.
Ethnic fractionalisation	Chance that 2 individuals belong to different groups. Time-invariant.
Linguistic fractionalisation	Chance that 2 individuals belong to different groups. Time-invariant.
Religious fractionalisation	Chance that 2 individuals belong to different groups. Time-invariant.
Ethnic diversity	Inverse of population share of largest group.
Religious diversity	Inverse of population share of largest group.

Table A3 Base results with lagged dependent variable (absolute redistribution)

	(1)	(2)	(3)	(4)	(5)
Lagged DV	0.950***	0.952***	0.944***	0.952***	0.949***
	(0.011)	(0.011)	(0.012)	(0.011)	(0.012)
Inequality (market Gini)	0.006	0.009	0.006	0.004	0.003
	(0.009)	(0.012)	(0.011)	(0.009)	(0.008)
Democ	0.019				
	(0.052)				
Democ*Inequality	-0.001				
	(0.001)				
Political rights		0.043			
		(0.095)			
Political rights*Inequality		-0.001			
		(0.002)			
Multiparty-electoral			0.054		
			(0.497)		
Multiparty-electoral*Inequality			-0.002		
			(0.011)		
Executive-competitive				0.102	
				(0.441)	
Executive-competitive*Inequality				-0.003	
				(0.010)	
Party-competitive					0.539
					(0.654)
Party-competitive*Inequality					-0.010
					(0.015)
GDP per capita	0.013	0.010	-0.018	0.000	-0.017
	(0.032)	(0.032)	(0.029)	(0.029)	(0.031)
Elderly	-0.062	-0.057	-0.032	-0.059	-0.069
	(0.047)	(0.046)	(0.051)	(0.048)	(0.050)
Elderly*Inequality	0.003**	0.003**	0.002*	0.003**	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Country FEs	N	N	N	N	N
Year FEs	N	N	N	N	N
Countries	145	152	152	149	145
Observations	3163	3194	2784	3152	3163
R-squared	.969	.970	.965	.969	.969
R-squared (adjusted)	.969	.970	.965	.969	.969

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A4 Base results with two-step system GMM (DV: Absolute redistribution)

	(1)	(2)	(3)	(4)	(5)
1-year lagged DV	0.802***	0.803***	0.809***	0.809***	0.808***
	(0.128)	(0.126)	(0.134)	(0.128)	(0.128)
2-year lagged DV	0.246*	0.249*	0.240	0.227	0.232
	(0.144)	(0.143)	(0.155)	(0.140)	(0.142)
3-year lagged DV	-0.281***	-0.287***	-0.265***	-0.288***	-0.290***
	(0.063)	(0.063)	(0.065)	(0.062)	(0.063)
Inequality (market Gini)	0.003	0.000	-0.031	0.020	0.013
	(0.079)	(0.101)	(0.103)	(0.082)	(0.079)
Democ	0.039				
	(0.224)				
Democ*Inequality	-0.002				
	(0.005)				
Political rights		-0.057			
		(0.612)			
Political rights*Inequality		0.001			
		(0.014)			
Multiparty-electoral			-0.991		
			(2.710)		
Multiparty-electoral*Inequality			0.019		
			(0.060)		
Executive-competitive				0.537	
				(1.264)	
Executive-competitive*Inequality				-0.014	
				(0.028)	
Party-competitive					1.768
					(2.017)
Party-competitive*Inequality					-0.023
					(0.045)
GDP per capita	0.037	0.009	-0.020	-0.018	-0.134
	(0.100)	(0.098)	(0.093)	(0.104)	(0.110)
Elderly	-0.207	-0.143	-0.219	-0.112	-0.146
	(0.258)	(0.194)	(0.306)	(0.345)	(0.424)
Elderly*Inequality	0.010*	0.008**	0.010	0.008	0.008
	(0.005)	(0.004)	(0.007)	(0.007)	(0.009)
Country FEs	N	N	N	N	N
Year FEs	N	N	N	N	N
Countries	141	149	146	146	141
Observations	2859	2904	2469	2872	2859
Instruments	112	112	100	112	112
Arellano-Bond test for AR(2)	.206	.218	.412	.392	.243
Hansen test	.401	.477	.699	.385	.332
Diff-in-Hansen test excluding group	.361	.476	.663	.353	.366

Windmeijer (2005) corrected standard errors. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A5 Base results with two-way fixed effects (DV: Absolute redistribution)

	(1)	(2)	(3)	(4)	(5)
Inequality (market Gini)	0.169**	0.120*	0.170**	0.132**	0.186***
	(0.067)	(0.070)	(0.075)	(0.061)	(0.067)
Democ	-0.346				
	(0.279)				
Democ*Inequality	0.008				
	(0.006)				
Political rights		-0.614			
		(0.511)			
Political rights*Inequality		0.013			
		(0.011)			
Multiparty-electoral			-1.622		
			(2.172)		
Multiparty-electoral*Inequality			0.039		
			(0.048)		
Executive-competitive				-1.715	
				(1.765)	
Executive-competitive*Inequality				0.040	
				(0.041)	
Party-competitive					-6.551*
					(3.755)
Party-competitive*Inequality					0.136*
					(0.080)
GDP per capita	-0.417	-1.331***	-1.280***	-1.449***	-1.090***
	(0.824)	(0.390)	(0.351)	(0.409)	(0.394)
Elderly	-1.185***	-0.367	-0.255	0.045	-0.407
	(0.360)	(0.930)	(0.790)	(0.987)	(0.826)
Elderly*Inequality	0.028***	0.030***	0.030***	0.031***	0.025***
	(0.007)	(0.007)	(0.006)	(0.007)	(0.008)
Country FEs	Y	Y	Y	Y	Y
Year FEs	Y	Y	Y	Y	Y
Countries	148	160	160	155	148
Observations	3476	3437	3108	3367	3476
R-squared	.919	.927	.913	.927	.920
R-squared (adjusted)	.914	.922	.907	.923	.915

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A6. Base results with time variable (DV: Absolute redistribution)

	(1)	(2)	(3)	(4)	(5)
Inequality (market Gini)	0.156**	0.109	0.166**	0.117*	0.172**
	(0.069)	(0.072)	(0.078)	(0.063)	(0.069)
Democ	-0.331				
	(0.285)				
Democ*Inequality	0.007				
	(0.006)				
Political rights		-0.571			
		(0.512)			
Political rights*Inequality		0.011			
		(0.011)			
Multiparty-electoral			-1.744		
			(2.258)		
Multiparty-electoral*Inequality			0.039		
			(0.050)		
Executive-competitive				-1.692	
				(1.763)	
Executive-competitive*Inequality				0.037	
				(0.041)	
Party-competitive					-6.066
					(3.955)
Party-competitive*Inequality					0.126
					(0.085)
GDP per capita	-0.267	-0.184	-0.151	-1.477***	-1.128***
	(0.818)	(0.934)	(0.778)	(0.416)	(0.405)
Elderly	-1.225***	-1.369***	-1.275***	0.250	-0.269
	(0.374)	(0.396)	(0.366)	(0.993)	(0.821)
Elderly*Inequality	0.029***	0.031***	0.030***	0.032***	0.026***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)
Year	-0.003	0.002	-0.014	-0.005	-0.004
	(0.025)	(0.028)	(0.025)	(0.027)	(0.024)
Country FEs	Y	Y	Y	Y	Y
Year FEs	N	N	N	N	N
Countries	148	160	160	155	148
Observations	3476	3437	3108	3367	3476
R-squared	.916	.925	.910	.925	.917
R-squared (adjusted)	.912	.921	.905	.922	.913

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A7 Base results with policy lag (DV: Absolute redistribution)

	1-year lead DV			5-year lead DV		
	(1)	(2)	(3)	(4)	(5)	(6)
Inequality (market Gini)	0.095	0.107	0.113*	-0.007	-0.005	0.036
	(0.060)	(0.064)	(0.059)	(0.085)	(0.087)	(0.084)
Democ	-0.218			-0.398		
	(0.237)			(0.354)		
Democ*Inequality	0.004			0.008		
	(0.005)			(0.008)		
Multiparty-electoral		-1.020			-0.142	
		(2.265)			(2.861)	
Multiparty-electoral*Inequality		0.022			-0.005	
		(0.050)			(0.065)	
Party-competitive			-5.641*			-13.725***
			(3.260)			(4.554)
Party-competitive*Inequality			0.111			0.284***
			(0.069)			(0.099)
GDP per capita	-0.037	-0.012	-0.022	0.397	0.393	0.346
	(0.752)	(0.770)	(0.729)	(0.857)	(0.850)	(0.819)
Elderly	-1.160***	-1.094***	-1.028***	0.147	-0.049	0.628
	(0.353)	(0.357)	(0.374)	(0.462)	(0.415)	(0.453)
Elderly*Inequality	0.028***	0.027***	0.025***	0.008	0.012	-0.004
	(0.006)	(0.006)	(0.007)	(0.009)	(0.008)	(0.009)
Country FEs	Y	Y	Y	Y	Y	Y
Year FEs	N	N	N	N	N	N
Countries	145	153	145	137	145	137
Observations	3148	2877	3148	2625	2653	2625
R-squared	.923	.919	.923	.898	.898	.901
R-squared (adjusted)	.919	.914	.919	.892	.891	.896

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A8 Effect of alternative political measures on absolute redistribution

	(1)	(2)	(3)	(4)	(5)
Inequality (market Gini)	0.195**	0.100	0.178**	0.181**	0.115*
	(0.087)	(0.076)	(0.076)	(0.079)	(0.064)
Democ	-0.102				
	(0.485)				
Democ*Inequality	0.003				
	(0.010)				
Autoc	0.316				
	(0.540)				
Autoc*Inequality	-0.006				
	(0.012)				
Civil liberties		-0.662			
		(0.618)			
Civil liberties*Inequality		0.015			
		(0.015)			
Alternation-constitutional			-0.261		
			(2.387)		
Alternation-constitutional*Inequality			0.005		
			(0.053)		
Suffrage-electoral				-1.200	
				(2.332)	
Suffrage-electoral*Inequality				0.021	
				(0.051)	
Legislative-competitive					-1.283
					(1.920)
Legislative-competitive*Inequality					0.026
					(0.046)
GDP per capita	-0.309	-0.154		-0.372	0.192
	(0.621)	(0.727)		(0.645)	(0.791)
Elderly	-1.243***	-1.335***	-0.359	-1.339***	-1.521***
	(0.374)	(0.409)	(0.640)	(0.429)	(0.418)
Elderly*Inequality	0.029***	0.030***	-1.379***	0.031***	0.033***
	(0.007)	(0.008)	(0.416)	(0.008)	(0.007)
Country FEs	Y	Y	Y	Y	Y
Year FEs	N	N	N	N	N
Countries	148	160	160	157	155
Observations	3476	3437	3108	2973	3367
R-squared	.916	.925	.910	.910	.925
R-squared (adjusted)	.913	.921	.905	.905	.922

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A9 Effect of regime age on absolute redistribution

	(1)	(2)	(3)
Inequality (market Gini)	0.229***	0.204**	0.235***
	(0.083)	(0.083)	(0.088)
Regime age (Polity)	1.537*		
	(0.924)		
Regime age (Polity)*Inequality	-0.035*		
	(0.020)		
Regime age (Polity)*Inequality*Democ	0.000		
	(0.001)		
Regime age (DD)		0.564	
		(0.840)	
Regime age (DD)*Inequality		-0.014	
		(0.019)	
Regime age (DD)*Inequality*Multiparty-electoral		0.000	
		(0.005)	
Regime age (Boix)			1.020
			(0.800)
Regime age (Boix)*Inequality			-0.024
			(0.017)
Regime age (Boix)*Inequality*Suffrage-electoral			-0.002
			(0.004)
GDP per capita	-0.410	-0.140	-0.077
	(0.886)	(0.788)	(0.762)
Elderly	-1.564***	-1.441***	-1.493***
	(0.364)	(0.409)	(0.406)
Elderly*Inequality	0.036***	0.033***	0.035***
	(0.007)	(0.008)	(0.007)
Year	0.001	-0.009	-0.009
	(0.027)	(0.026)	(0.027)
Country FEs	Y	Y	Y
Year FEs	N	N	N
Countries	144	160	157
Observations	3234	3108	2973
R-squared	.921	.910	.911
R-squared (adjusted)	.917	.905	.906

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A10 Effects of government type on absolute redistribution

	(1)	(2)
Inequality (market Gini)	0.177**	0.120*
	(0.077)	(0.064)
Parliamentary democracy	0.284	
	(0.602)	
Presidential democracy	0.016	
	(0.609)	
Semi-presidential democracy	-0.504	
	(0.767)	
Communist	-0.224	
	(1.307)	
Parliamentary regime		-1.302
		(1.353)
Parliamentary regime*Legislative-competitive		-0.074
		(0.518)
Presidential regime		-1.280
		(1.266)
Presidential regime*Executive-competitive		-0.031
		(0.451)
Semi-presidential regime		-1.509
		(1.475)
Semi-presidential regime*Executive-competitive		0.751
		(0.842)
GDP per capita	-0.379	0.085
	(0.655)	(0.786)
Elderly	-1.395***	-1.579***
	(0.390)	(0.388)
Elderly*Inequality	0.032***	0.034***
	(0.007)	(0.007)
Country FEs	Y	Y
Year FEs	N	N
Countries	160	155
Observations	3108	3366
R-squared	.910	.926
R-squared (adjusted)	.905	.922

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A11 Effects of electoral system on absolute redistribution

	(1)	(2)
Inequality (market Gini)	0.168**	0.112*
	(0.075)	(0.066)
Majoritarian democracy	-0.354	
	(0.830)	
Mixed-member democracy	-0.784	
	(0.676)	
Proportional democracy	-0.241	
	(0.599)	
Plurality regime		-0.544
		(0.582)
Plurality regime*Legislative-competitive		-0.092
		(0.517)
Proportional regime		-0.699
		(0.836)
Proportional regime* Legislative-competitive		-0.153
		(0.671)
GDP per capita	0.057	0.265
	(0.651)	(0.826)
Elderly	-1.390***	-1.537***
	(0.368)	(0.370)
Elderly*Inequality	0.031***	0.034***
	(0.007)	(0.007)
Country FEs	Y	Y
Year FEs	N	N
Countries	160	155
Observations	3521	3309
R-squared	.916	.929
R-squared (adjusted)	.912	.925

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A12 Effect of legislative voter turnout on absolute redistribution

	(1)	(2)	(3)	(4)	(5)
Inequality (market Gini)	0.157**	0.107	0.172**	0.119*	0.174**
	(0.070)	(0.073)	(0.079)	(0.063)	(0.070)
Democ	-0.364				
	(0.296)				
Democ*Inequality	0.007				
	(0.006)				
Democ*Parliamentary turnout	0.050				
	(0.101)				
Political rights		-0.661			
		(0.517)			
Political rights*Inequality		0.011			
		(0.011)			
Democ*Parliamentary turnout		0.103			
		(0.157)			
Multiparty-electoral			-1.431		
			(2.330)		
Multiparty-electoral*Inequality			0.036		
			(0.051)		
Multiparty-electoral*Parliamentary turnout			-0.408		
			(0.743)		
Executive-competitive				-2.192	
				(1.901)	
Executive-competitive*Inequality				0.038	
				(0.041)	
Executive-competitive *Parliamentary turnout				0.724	
				(0.878)	
Party-competitive					-7.730*
					(4.289)
Party-competitive*Inequality					0.134
					(0.085)
Party-competitive *Parliamentary turnout					1.947
					(1.654)
GDP per capita	-0.324	-0.140	-0.360	0.186	-0.338
	(0.633)	(0.728)	(0.617)	(0.803)	(0.618)
Elderly	-1.229***	-1.362***	-1.295***	-1.479***	-1.118***
	(0.371)	(0.390)	(0.371)	(0.419)	(0.405)
Elderly*Inequality	0.029***	0.031***	0.030***	0.032***	0.026***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)
Country FEs	Y	Y	Y	Y	Y
Year FEs	N	N	N	N	N
Countries	148	160	160	155	148
Observations	3476	3437	3108	3367	3476
R-squared	.916	.925	.910	.925	.917
R-squared (adjusted)	.912	.921	.905	.922	.913

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A13 Effect of weighted voter turnout on absolute redistribution

	(1)	(2)
Inequality (market Gini)	0.184**	0.114
	(0.076)	(0.069)
Parliamentary democracy*Parliamentary turnout	-1.543	
	(5.106)	
Parliamentary democracy*Parliamentary turnout*Inequality	0.051	
	(0.121)	
Presidential democracy*Presidential turnout	2.366	
	(3.154)	
Presidential democracy*Presidential turnout*Inequality	-0.051	
	(0.067)	
Semi-presidential democracy*Parliamentary turnout	-5.667	
	(4.937)	
Semi-presidential democracy*Parliamentary turnout*Inequality	0.113	
	(0.116)	
Parliamentary regime*Parliamentary turnout		-3.090
		(3.886)
Parliamentary regime*Parliamentary turnout*Inequality		0.066
		(0.090)
Presidential regime*Presidential turnout		-1.423
		(3.612)
Presidential regime*Presidential turnout*Inequality		0.032
		(0.082)
Semi-presidential regime*Parliamentary turnout		-1.162
		(4.029)
Semi-presidential regime*Parliamentary turnout*Inequality		0.028
		(0.087)
GDP per capita	-0.471	0.167
	(0.642)	(0.798)
Elderly	-1.248***	-1.488***
	(0.468)	(0.422)
Elderly*Inequality	0.029***	0.032***
	(0.009)	(0.007)
Country FEs	Y	Y
Year FEs	N	N
Countries	160	155
Observations	3108	3368
R-squared	.911	.926
R-squared (adjusted)	.906	.922

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A14 Base results with additional controls (DV: Absolute redistribution)

	(1)	(2)	(3)	(4)	(5)
Inequality (market Gini)	0.147*	0.102	0.152*	0.119*	0.162**
	(0.074)	(0.082)	(0.087)	(0.066)	(0.070)
Democ	-0.312				
	(0.377)				
Democ*Inequality	0.007				
	(0.008)				
Political rights		-0.607			
		(0.663)			
Political rights*Inequality		0.012			
		(0.014)			
Multiparty-electoral			-2.302		
			(2.755)		
Multiparty-electoral*Inequality			0.050		
			(0.060)		
Executive-competitive				-1.347	
				(2.038)	
Executive-competitive*Inequality				0.030	
				(0.046)	
Party-competitive					-7.468*
					(4.208)
Party-competitive*Inequality					0.152*
					(0.089)
GDP per capita	0.141	0.193	0.159	0.113	0.141
	(0.782)	(0.831)	(0.806)	(0.818)	(0.759)
Reserves	0.170	0.136	0.200	0.125	0.205
	(0.182)	(0.180)	(0.178)	(0.180)	(0.180)
Population	-0.386	0.115	-0.569	0.327	-0.521
	(1.451)	(1.507)	(1.647)	(1.377)	(1.445)
Trade	-0.058	-0.109	-0.200	-0.177	-0.017
	(0.575)	(0.546)	(0.605)	(0.534)	(0.576)
Growth	-0.996	-0.767	-0.210	-0.646	-0.614
	(1.599)	(1.496)	(1.808)	(1.475)	(1.581)
Inflation	-0.005	-0.004	-0.002	-0.004	-0.004
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Elderly	-1.296***	-1.365***	-1.345***	-1.440***	-1.161***
	(0.388)	(0.389)	(0.377)	(0.390)	(0.393)
Elderly*Inequality	0.029***	0.031***	0.030***	0.033***	0.026***
	(0.008)	(0.008)	(0.007)	(0.007)	(0.008)
Urban	-3.172	-3.282	-3.891	-3.729	-3.310
	(3.733)	(4.009)	(4.198)	(4.129)	(3.657)
Country FEs	Y	Y	Y	Y	Y
Year FEs	N	N	N	N	N
Countries	142	152	152	147	142
Observations	3184	3158	2806	3094	3184
R-squared	.928	.934	.924	.936	.929
R-squared (adjusted)	.924	.931	.919	.933	.925

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A15. Testing for quadratic of GDP per capita and interactions (DV: Absolute redistribution)

	(1)	(2)	(3)	(4)	(5)
Inequality (market Gini)	-0.194	-0.499	-0.313	-0.177	-0.548
	(0.860)	(0.835)	(0.883)	(0.806)	(0.865)
Democ	-0.280				
	(0.291)				
Democ*Inequality	0.006				
	(0.006)				
Political rights		-0.453			
		(0.518)			
Political rights*Inequality		0.008			
		(0.011)			
Multiparty-electoral			-1.311		
			(2.189)		
Multiparty-electoral*Inequality			0.028		
			(0.049)		
Executive-competitive				-1.104	
				(1.789)	
Executive-competitive*Inequality				0.024	
				(0.041)	
Party-competitive					-7.605
					(5.033)
Party-competitive*Inequality					0.158
					(0.107)
GDP per capita	-8.858	-10.028	-9.846	-5.651	-13.606
	(9.532)	(10.159)	(9.717)	(9.994)	(9.894)
GDP per capita*Inequality	0.090	0.148	0.124	0.063	0.199
	(0.212)	(0.210)	(0.218)	(0.201)	(0.220)
GDP per capita^2	0.535	0.576	0.592	0.299	0.897
	(0.606)	(0.652)	(0.615)	(0.634)	(0.651)
GDP per capita^2*Inequality	-0.005	-0.008	-0.007	-0.002	-0.014
	(0.013)	(0.013)	(0.013)	(0.012)	(0.014)
Elderly	-1.284**	-1.261**	-1.332**	-1.256**	-1.408***
	(0.496)	(0.525)	(0.562)	(0.568)	(0.504)
Elderly*Inequality	0.028***	0.027**	0.028**	0.026**	0.030***
	(0.010)	(0.010)	(0.011)	(0.010)	(0.010)
Country FEs	Y	Y	Y	Y	Y
Year FEs	N	N	N	N	N
Countries	148	160	160	155	148
Observations	3476	3437	3108	3367	3476
R-squared	.917	.926	.911	.926	.918
R-squared (adjusted)	.914	.922	.906	.922	.914

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A16. Effect of education on absolute redistribution

	(1)	(2)	(3)
Inequality (market Gini)	0.167*	0.168**	0.163**
	(0.097)	(0.079)	(0.076)
Democ	-0.345	-0.367	-0.289
	(0.306)	(0.312)	(0.305)
Democ*Inequality	0.008	0.008	0.006
	(0.007)	(0.007)	(0.007)
GDP per capita	-0.463	-0.740	-0.883
	(0.691)	(0.735)	(0.642)
Elderly	-1.174***	-1.262***	-1.320***
	(0.386)	(0.347)	(0.379)
Elderly*Inequality	0.028***	0.030***	0.030***
	(0.008)	(0.007)	(0.007)
Primary educated	1.556		
	(9.254)		
Primary educated*Inequality	-0.041		
	(0.195)		
Secondary educated		7.595	
		(7.921)	
Secondary educated*Inequality		-0.130	
		(0.164)	
Tertiary educated			24.125
			(26.043)
Tertiary educated*Inequality			-0.315
			(0.574)
Country FEs	Y	Y	Y
Year FEs	N	N	N
Countries	124	124	124
Observations	3139	3139	3139
R-squared	.924	.925	.925
R-squared (adjusted)	.921	.921	.922

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A17. Effect of religion on absolute redistribution

	(1)	(2)	(3)	(4)
Inequality (market Gini)	0.157**	0.154**	0.199	0.185
	(0.071)	(0.069)	(0.121)	(0.125)
Democ	-0.326	-0.351	-0.350	-0.383
	(0.283)	(0.282)	(0.278)	(0.296)
Democ*Inequality	0.007	0.007	0.008	0.011
	(0.006)	(0.006)	(0.006)	(0.008)
GDP per capita	-0.347	-0.398	-0.498	-0.470
	(0.633)	(0.627)	(0.650)	(0.622)
Elderly	-1.224***	-1.246***	-1.215***	-1.205***
	(0.372)	(0.379)	(0.416)	(0.415)
Elderly*Inequality	0.029***	0.029***	0.028***	0.028***
	(0.007)	(0.007)	(0.008)	(0.008)
Catholic (Gandhi)	-39.317***			
	(12.484)			
Muslim (Gandhi)	26.051**			
	(10.114)			
Protestant (Gandhi)	159.572**			
	(62.315)			
Catholic (WRD)		2.683	2.894	1.454
		(6.170)	(7.804)	(7.836)
Catholic (WRD)*Inequality			-0.094	-0.064
			(0.116)	(0.119)
Catholic (WRD)*Inequality*Democ				-0.005
				(0.004)
Muslim (WRD)		8.165	12.101	10.873
		(8.709)	(10.640)	(10.713)
Muslim (WRD)*Inequality			-0.074	-0.057
			(0.141)	(0.144)
Muslim (WRD)*Inequality*Democ				-0.003
				(0.004)
Protestant (WRD)		-0.180	3.628	4.046
		(6.483)	(7.040)	(6.956)
Protestant (WRD)*Inequality			-0.002	0.016
			(0.175)	(0.214)
Protestant (WRD)*Inequality*Democ				-0.004
				(0.013)
Country FEs	N	Y	N	Y
Year FEs	N	N	N	N
Countries	145	148	148	148
Observations	3456	3476	3476	3476
R-squared	.916	.917	.917	.918
R-squared (adjusted)	.912	.913	.914	.914

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A18. Effect of fractionalisation and diversity on absolute redistribution

	(1)	(2)	(3)	(4)	(5)
Inequality (market Gini)	0.084	0.092	0.133*	0.075	0.132*
	(0.100)	(0.096)	(0.067)	(0.091)	(0.073)
Democ	-0.351	-0.362	-0.328	-0.332	-0.307
	(0.279)	(0.284)	(0.282)	(0.278)	(0.261)
Democ*Inequality	0.008	0.008	0.007	0.007	0.007
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
GDP per capita	-0.260	-0.273	-0.339	-0.280	-0.315
	(0.577)	(0.588)	(0.640)	(0.574)	(0.616)
Elderly	-1.349***	-1.302***	-1.235***	-1.391***	-1.224***
	(0.374)	(0.382)	(0.367)	(0.383)	(0.372)
Elderly*Inequality	0.031***	0.030***	0.029***	0.033***	0.028***
	(0.007)	(0.007)	(0.007)	(0.008)	(0.007)
Ethnic fractionalisation	-7.110				
	(9.618)				
Ethnic fractionalisation*Inequality	0.119				
	(0.162)				
Linguistic fractionalisation		0.000			
		(9.153)			
Linguistic fractionalisation*Inequality		0.136			
		(0.153)			
Religious fractionalisation			516.649		
			(4406.090)		
Religious fractionalisation*Inequality			0.047		
			(0.152)		
Ethnic diversity				43.089	
				(59.196)	
Ethnic diversity*Inequality				0.183	
				(0.190)	
Religious diversity					-4.267
					(7.528)
Religious diversity*Inequality					0.093
					(0.131)
Country FEs	Y	Y	Y	Y	Y
Year FEs	N	N	N	N	N
Countries	144	141	146	145	145
Observations	3442	3383	3462	3456	3456
R-squared	.916	.917	.916	.917	.916
R-squared (adjusted)	.913	.913	.912	.913	.912

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A19. Summary statistics for restricted dataset (Table A23)

	Obs	Mean	SD	Min	Max	Source
Political						
Democ	1886	7.79	3.08	0	10	Marshall et al. (2016) Polity IV
Political rights	1903	5.76	1.76	1	7	Freedom House (2016)
Party-competitive	1886	0.49	0.50	0	1	Marshall et al. (2016) Polity IV
Multiparty-electoral	1561	0.93	0.25	0	1	Cheibub et al. (2010) DD
Executive-competitive	1902	0.86	0.35	0	1	Cruz et al. (2016) DPI
Economic						
Absolute redistribution	1904	10.51	7.17	-5.29	26.89	Solt (2016) SWIID 5.1
Market inequality	1904	45.72	6.31	23.67	68.01	Solt (2016) SWIID 5.1
GDP per capita	1887	9.29	1.29	5.9	11.61	World Bank (2016) WDI
Demographic						
% Elderly	1904	10.8	4.84	2.70	23.59	World Bank (2016) WDI

Table A20. Notes on variables for restricted dataset (Table A23)

	Notes
Political	
Democ	'Democ'. Interruption, interregnum and transition coded 0.
Political rights	Inverse.
Party-competitive	'Parcomp'=5. Stable and secular party competition.
Multiparty-electoral	Multiple parties in legislature and elected executive.
Executive-competitive	'Eiec'=7. Executive got less than 75% of votes.
Economic	
Absolute redistribution	100 imputations. Summary statistics provided for point estimate.
Inequality (market Gini)	100 imputations. Summary statistics provided for point estimate.
GDP per capita	Log of 'NY.GDP.PCAP.KD'.
Demographic	
% Elderly	'SP.POP.65UP.TO.ZS'. 65 years and above.

Table A21. Base results for high-quality restricted dataset (DV: Absolute redistribution)

	(1)	(2)	(3)	(4)	(5)
Inequality (market Gini)	0.104	0.077	0.123	0.091	0.110
	(0.111)	(0.128)	(0.145)	(0.112)	(0.104)
Democ	-0.175				
	(0.439)				
Democ*Inequality	0.004				
	(0.009)				
Political rights		-0.865			
		(0.809)			
Political rights*Inequality		0.014			
		(0.016)			
Multiparty-electoral			-1.676		
			(5.343)		
Multiparty-electoral*Inequality			0.037		
			(0.111)		
Executive-competitive				-2.987	
				(3.254)	
Executive-competitive*Inequality				0.061	
				(0.071)	
Party-competitive					-3.184
					(4.195)
Party-competitive*Inequality					0.061
					(0.090)
GDP per capita	-0.085	-0.051	-0.260	0.046	-0.051
	(0.806)	(0.799)	(0.856)	(0.820)	(0.799)
Elderly	-1.443***	-1.331***	-1.436***	-1.390***	-1.424***
	(0.441)	(0.423)	(0.483)	(0.440)	(0.463)
Elderly*Inequality	0.033***	0.031***	0.032***	0.032***	0.032***
	(0.009)	(0.008)	(0.009)	(0.009)	(0.010)
Country FEs	Y	Y	Y	Y	Y
Year FEs	N	N	N	N	N
Countries	69	70	70	70	69
Observations	1869	1886	1544	1885	1869
R-squared	.953	.953	.954	.952	.953
R-squared (adjusted)	.951	.951	.951	.950	.951

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A22. Summary Statistics for Houle (2016b) comparison (Democracies only) (Tables A27 to A30)

	Obs	Mean	SD	Min	Max	Source
Absolute redistribution	2211	9.11	7.12	-14.73	26.92	Solt (2014) SWIID v5.0
Relative redistribution	2211	20.47	16.01	-38.07	56.12	Solt (2014) SWIID v5.0
Market inequality	2211	44.64	6.66	21.67	66.31	Solt (2014) SWIID v5.0
GDP pc (logged)	2064	8.77	1.00	6.00	10.35	Maddison (2010)
Growth	2064	3.35	4.29	-41.80	27.49	Maddison (2010)
Polity2	2145	8.38	2.35	-6	10	Polity IV (2016)
Ethnic diversity	2201	23.31	20.92	0	79.00	Gandhi (2004)
Turnout	2092	70.11	15.47	2.14	129.11	IDEA (2016)
% Elderly	2189	9.39	4.70	2.35	20.96	WB WDI (2016)
% Muslim	2202	7.49	21.50	0	99.70	Gandhi (2004)
% Catholic	2202	47.27	38.97	0	99.00	Gandhi (2004)
Proportional representation	2159	0.56	0.50	0	1	Bormann & Golder (2013)
Presidential	2211	0.30	0.46	0	1	Cheibub et al. (2010) DD

Table A23. Summary Statistics for Houle (2016b) comparison (All regimes) (Tables A27 to A30)

	Obs	Mean	SD	Min	Max	Source
Absolute redistribution	4098	6.77	6.43	-14.73	26.92	Solt (2014) SWIID v5.0
Relative redistribution	4098	15.24	14.92	-91.66	56.12	Solt (2014) SWIID v5.0
Market inequality	4098	43.57	8.55	17.34	72.85	Solt (2014) SWIID v5.0
GDP pc (logged)	3726	8.37	1.06	5.44	10.35	Maddison (2010)
Growth	3707	3.75	5.34	-50.19	54.20	Maddison (2010)
Polity2	3718	3.58	6.80	-10	10	Polity IV (2016)
Ethnic diversity	3966	27.34	23.28	0	82.00	Gandhi (2004)
Turnout	3490	60.74	25.32	0	142.76	IDEA (2016)
% Elderly	3862	7.58	4.59	1.13	20.96	WB WDI (2016)
% Muslim	3967	18.96	33.46	0	100.00	Gandhi (2004)
% Catholic	3967	36.97	37.60	0	99.00	Gandhi (2004)
Proportional representation	3789	0.32	0.47	0	1	Bormann and Golder (2013)
Presidential	3815	0.17	0.38	0	1	Cheibub et al. (2010) DD
Democracy	3815	0.58	0.49	0	1	Cheibub et al. (2010) DD

Table A24. Notes on variables for Houle (2016b) comparison (Tables A27 to A30)

	Notes
Absolute redistribution	100 imputations. Summary statistics provided for point estimate.
Relative redistribution	100 imputations. Summary statistics provided for point estimate.
Market inequality	100 imputations. Summary statistics provided for point estimate.
GDP pc (logged)	
Growth	GDP growth.
Polity2	Sum of 'Democ' and 'Autoc'.
Ethnic diversity	Inverse of population share of largest ethnic group.
Turnout	Votes / voting age population. Parliamentary or presidential elections.
% Elderly	Age 65 and above.
% Muslim	Muslims over population. Time-invariant. Observation in 1993/4.
% Catholic	Catholics over population. Time-invariant. Observation in 1993/4.
Proportional representation	'Legislative_type'=2. Dictatorships (Cheibub et al., 2010) coded 0.
Presidential	'Regime'=2.
Democracy	Multiparty legislature, elected executive, alternation, constitutionality.

Table A25. Comparison with Houle (2016b); Absolute redistribution with lagged DV

	(1)	(2)	(3)	(4)
Lagged DV	0.820***	0.808***	0.775***	0.776***
	(0.029)	(0.026)	(0.028)	(0.028)
Market inequality	0.111***	0.085***	0.010	0.011
	(0.023)	(0.016)	(0.019)	(0.020)
GDP pc (log)	0.400**	0.202*	0.223**	0.222**
	(0.154)	(0.111)	(0.112)	(0.111)
Growth	-0.020	-0.002	-0.006	-0.006
	(0.021)	(0.015)	(0.015)	(0.014)
Polity2	-0.003	0.004	0.122	
	(0.041)	(0.014)	(0.082)	
Polity2*Market inequality			-0.003	
			(0.002)	
Democracy				0.199
				(1.051)
Democracy*Market inequality				0.002
				(0.024)
Ethnic diversity	-0.004	-0.001	-0.001	-0.001
	(0.005)	(0.004)	(0.004)	(0.004)
Turnout	0.004	0.005	0.004	0.004
	(0.006)	(0.003)	(0.004)	(0.004)
% Elderly	0.107***	0.168***	-0.416***	-0.356***
	(0.035)	(0.035)	(0.137)	(0.127)
% Elderly*Market inequality			0.013***	0.012***
			(0.003)	(0.003)
% Muslim	-0.003	0.002	-0.001	-0.001
	(0.006)	(0.003)	(0.003)	(0.003)
% Catholic	-0.006**	-0.004**	-0.007***	-0.007***
	(0.003)	(0.002)	(0.002)	(0.002)
Proportional representation	0.465**	0.588**	0.861***	0.794***
	(0.206)	(0.246)	(0.263)	(0.260)
Presidential	-0.442	-0.174	-0.124	-0.310
	(0.275)	(0.203)	(0.203)	(0.272)
Proportional representation*Presidential	-0.825**	-0.875***	-1.121***	-1.091***
	(0.318)	(0.326)	(0.354)	(0.349)
Country FEs	N	N	N	N
Year FEs	N	N	N	N
Countries	84	130	130	131
Observations	1803	2780	2780	2806
R-squared	.929	.912	.914	.914
R-squared (adjusted)	.929	.911	.914	.914

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A26. Comparison with Houle (2016b); Absolute redistribution with country FEs

	(1)	(2)	(3)	(4)
Market inequality	0.526***	0.471***	0.260***	0.254***
	(0.050)	(0.042)	(0.066)	(0.070)
GDP pc (log)	0.308	0.259	0.432	0.467
	(0.882)	(0.606)	(0.573)	(0.598)
Growth	-0.006	0.004	-0.006	-0.004
	(0.021)	(0.020)	(0.020)	(0.020)
Polity2	-0.013	-0.009	-0.126	
	(0.090)	(0.035)	(0.197)	
Polity2*Market inequality			0.002	
			(0.004)	
Democracy				-0.852
				(2.399)
Democracy*Market inequality				0.013
				(0.052)
Turnout	-0.001	0.001	0.001	-0.001
	(0.016)	(0.010)	(0.009)	(0.010)
% Elderly	0.037	0.081	-1.152***	-1.197***
	(0.180)	(0.151)	(0.395)	(0.401)
% Elderly*Market inequality			0.026***	0.026***
			(0.007)	(0.007)
Country FEs	Y	Y	Y	Y
Year FEs	N	N	N	N
Countries	87	131	131	134
Observations	1938	2968	2968	2968
R-squared	.935	.917	.922	.922
R-squared (adjusted)	.932	.913	.919	.918

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A27. Comparison with Houle (2016b); relative redistribution with lagged DV

	(1)	(2)	(3)	(4)
Lagged DV	0.837***	0.807***	1.767***	1.783***
	(0.064)	(0.065)	(0.107)	(0.110)
Market inequality	0.161**	0.141**	0.023	0.032
	(0.065)	(0.061)	(0.082)	(0.090)
GDP pc (log)	0.826*	0.483*	0.735**	0.719**
	(0.435)	(0.284)	(0.324)	(0.330)
Growth	-0.035	-0.001	-0.007	-0.014
	(0.064)	(0.045)	(0.059)	(0.055)
Polity2	-0.005	0.020	0.863**	
	(0.098)	(0.035)	(0.362)	
Polity2*Market inequality			-0.019**	
			(0.009)	
Democracy				5.890
				(4.680)
Democracy*Market inequality				-0.112
				(0.105)
Ethnic diversity	-0.009	-0.005	-0.011	-0.012
	(0.011)	(0.009)	(0.010)	(0.010)
Turnout	0.012	0.011	0.012	0.010
	(0.012)	(0.008)	(0.009)	(0.009)
% Elderly	0.180*	0.327***	0.165	0.293
	(0.093)	(0.119)	(0.594)	(0.602)
% Elderly*Market inequality			0.001	-0.002
			(0.012)	(0.013)
% Muslim	-0.009	0.002	-0.006	-0.008
	(0.014)	(0.007)	(0.009)	(0.008)
% Catholic	-0.013*	-0.011*	-0.018**	-0.018**
	(0.007)	(0.007)	(0.008)	(0.008)
Proportional representation	1.035*	1.462*	2.166***	2.116**
	(0.602)	(0.766)	(0.802)	(0.822)
Presidential	-0.807	-0.364	-0.223	-0.511
	(0.664)	(0.485)	(0.556)	(0.706)
Proportional representation*Presidential	-1.732*	-2.117**	-2.530***	-2.507***
	(0.915)	(1.048)	(0.941)	(0.948)
Country FEs	N	N	N	N
Year FEs	N	N	N	N
Countries	84	130	130	132
Observations	1803	2780	2780	2806
R-squared	.927	.900	.887	.885
R-squared (adjusted)	.926	.899	.887	.885

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

Table A28. Comparison with Houle (2016b); relative redistribution with country FEs

	(1)	(2)	(3)	(4)
Market inequality	0.730***	0.731***	0.611***	0.623***
	(0.135)	(0.138)	(0.197)	(0.226)
GDP pc (log)	0.007	0.446	0.534	0.546
	(2.051)	(1.345)	(1.348)	(1.414)
Growth	-0.036	0.002	-0.003	0.001
	(0.052)	(0.065)	(0.065)	(0.060)
Polity2	0.071	-0.002	0.034	
	(0.212)	(0.075)	(0.553)	
Polity2*Market inequality			-0.001	
			(0.012)	
Democ				1.308
				(8.309)
Democ*Market inequality				-0.039
				(0.181)
Turnout	0.007	0.005	0.005	0.002
	(0.034)	(0.020)	(0.019)	(0.022)
% Elderly	0.025	0.004	-0.747	-0.815
	(0.414)	(0.361)	(0.978)	(1.038)
% Elderly*Market inequality			0.016	0.017
			(0.018)	(0.020)
Country FEs	Y	Y	Y	Y
Year FEs	N	N	N	N
Countries	87	131	131	134
Observations	1938	2968	2968	2968
R-squared	.929	.909	.909	.908
R-squared (adjusted)	.926	.904	.905	.904

OLS estimates. Robust standard errors clustered by country. ***p<0.01, **p<0.05, *p<0.1. Constant not shown.

References

Acemoglu, Daron, and James A. Robinson. 2001. 'A Theory of Political Transitions'. *The American Economic Review* 91 (4): 938–963.

———. 2008. 'Persistence of Power, Elites, and Institutions'. *The American Economic Review* 98 (1): 267–293.

Achen, Christopher H. 2001. 'Why Lagged Dependent Variables Can Suppress the Explanatory Power of Other Independent Variables'. University of Michigan. https://www.princeton.edu/csdp/events/Achen121201/achen.pdf.

Albertus, Michael. 2015. *Autocracy and Redistribution*. Cambridge University Press.

Albertus, Michael, and Victor Menaldo. 2014. 'Gaming Democracy: Elite Domination during Transition and the Prospects for Redistribution'. *British Journal of Political Science* 44 (03): 575–603.

Alesina, Alberto, Arnaud Devleeschauwer, William Easterly, Sergio Kurlat, and Romain Wacziarg. 2003. 'Fractionalization'. *Journal of Economic Growth* 8 (2): 155–194.

Alesina, Alberto, Edward L. Glaeser, and Bruce Sacerdote. 2001. 'Why Doesn't the US Have a European-Style Welfare System?' *Brookings Papers on Economic Activity*, no. 2: 187–277.

Alesina, Alberto, and Dani Rodrik. 1994. 'Distributive Politics and Economic Growth'. *The Quarterly Journal of Economics* 109 (2): 465–490.

Alesina, Alberto, and Romain Wacziarg. 1998. 'Openness, Country Size and Government'. *Journal of Public Economics* 69 (3): 305–321.

Altman, David, and Aníbal Pérez-Liñán. 2002. 'Assessing the Quality of Democracy: Freedom, Competitiveness and Participation in Eighteen Latin American Countries'. *Democratization* 9 (2): 85–100.

Ansell, Ben W., and David J. Samuels. 2014. *Inequality and Democratization*. Cambridge University Press.

Armstrong, Scott. 1983. 'Marcos Targets Village Industries as Key to Philippine Prosperity'. *Christian Science Monitor*, January 27. http://www.csmonitor.com/1983/0127/012746.html.

Atkinson, Anthony B. 2015. *Inequality: What Can Be Done?* Harvard University Press.

Austen-Smith, David. 2000. 'Redistributing Income under Proportional Representation'. *Journal of Political Economy* 108 (6): 1235–1269.

Avelino, George, David S. Brown, and Wendy Hunter. 2005. 'The Effects of Capital Mobility, Trade Openness, and Democracy on Social Spending in Latin America, 1980–1999'. *American Journal of Political Science* 49 (3): 625–641.

Ban, Sung Hwan. 1981. 'Development of the Rural Infrastructure and the Saemaul Undong'. In *Toward a New Community Life*, edited by Man-Gap Lee. Seoul National University Institute of Saemaul Undong Studies.

Bassett, William F., John P. Burkett, and Louis Putterman. 1999. 'Income Distribution, Government Transfers, and the Problem of Unequal Influence'. *European Journal of Political Economy* 15 (2): 207–228.

Beck, Nathaniel, and Jonathan N. Katz. 1995. 'What to Do (and Not to Do) with Time-Series Cross-Section Data'. *American Political Science Review* 89 (03): 634–647.

Bellettini, Giorgio, and Carlotta Berti Ceroni. 2007. 'Income Distribution, Borrowing Constraints and Redistributive Policies'. *European Economic Review* 51 (3): 625–645.

Blundell, Richard, and Stephen Bond. 1998. 'Initial Conditions and Moment Restrictions in Dynamic Panel Data Models'. *Journal of Econometrics* 87 (1): 115–143.

Boix, Carles. 1998. *Political Parties, Growth and Equality: Conservative and Social Democratic Economic Strategies in the World Economy*. Cambridge University Press.

———. 2003. *Democracy and Redistribution*. Cambridge University Press.

Boix, Carles, Michael Miller, and Sebastian Rosato. 2013. 'A Complete Data Set of Political Regimes, 1800–2007'. *Comparative Political Studies* 46 (12): 1523–1554.

Boone, Peter. 1996. 'Politics and the Effectiveness of Foreign Aid'. *European Economic Review* 40 (2): 289–329.

Bormann, Nils-Christian, and Matt Golder. 2013. 'Democratic Electoral Systems around the World, 1946–2011'. *Electoral Studies* 32 (2): 360–369.

Borras, Saturnino M. 2006. 'The Philippine Land Reform in Comparative Perspective: Some Conceptual and Methodological Implications'. *Journal of Agrarian Change* 6 (1): 69–101.

Brandt, V.S.R. 1981. 'Value and Attitude Change and the Saemaul Movement'. In *Toward a New Community Life*, edited by Man-Gap Lee. Seoul National University Institute of Saemaul Undong Studies.

Breslauer, George W. 1978. 'On the Adaptability of Soviet Welfare-State Authoritarianism'. In *Soviet Society and the Communist Party*, edited by Karl W. Ryevac. Amherst: University of Massachusetts Press.

Busemeyer, Marius R., Achim Goerres, and Simon Weschle. 2009. 'Attitudes towards Redistributive Spending in an Era of Demographic Ageing: The Rival Pressures from Age and Income in 14 OECD Countries'. *Journal of European Social Policy* 19 (3): 195–212.

Cai, Yong, and Yuan Cheng. 2014. 'Pension Reform in China: Challenges and Opportunities'. *Journal of Economic Surveys* 28 (4): 636–651.

Castles, Francis G. 1986. ‘Whatever Happened to the Communist Welfare State?’ *Studies in Comparative Communism* 19 (3–4): 213–226.
Cheibub, José Antonio, Jennifer Gandhi, and James Raymond Vreeland. 2010. ‘Democracy and Dictatorship Revisited’. *Public Choice* 143 (1–2): 67–101.
Chen, Xiao, Philip Ender, Michael Mitchell, and Christine Wells. 2003. *Regression with STATA*. http://www.ats.ucla.edu/stat/stata/webbooks/reg/default.htm.
Cruz, Cesi, Philip Keefer, and Carlos Scartascini. 2016. ‘Database of Political Institutions Codebook, 2015 Update (DPI2015)’. *Inter-American Development Bank*.
Dahl, Robert A. 1971. *Polyarchy: Participation and Opposition*. New Haven: Yale University Press.
———. 1982. *Dilemmas of Pluralist Democracy: Autonomy vs. Control*. Yale University Press.
Dasgupta, Partha. 1993. *An Inquiry into Well-Being and Destitution*. Oxford: Oxford University Press.
De Mello, Luiz, and Erwin R. Tiongson. 2006. ‘Income Inequality and Redistributive Government Spending’. *Public Finance Review* 34 (3): 282–305.
De Tocqueville, Alexis. 1835a. *Democracy in America*. New York: Vintage.
———. 1835b. ‘Democracy in America, Edited by Richard D’. *Heffner. New York: Mentor*.
Deininger, Klaus, and Lyn Squire. 1996. ‘A New Data Set Measuring Income Inequality’. *The World Bank Economic Review* 10 (3): 565–591.
Douglass, Mike. 2013. ‘The Saemaul Undong: South Korea’s Rural Development Miracle in Historical Perspective’. *ARI Working Paper* 197 (February). http://www.ari.nus.edu.sg/pub/wps.htm.
Downs, Anthony. 1957. ‘An Economic Theory of Political Action in a Democracy’. *Journal of Political Economy* 65 (2): 135–150.
Easterly, William, and Ross Levine. 1997. ‘Africa’s Growth Tragedy: Policies and Ethnic Divisions’. *The Quarterly Journal of Economics* 112 (4): 1203–1250.
Edelman, Murray J. 1964. *The Symbolic Uses of Politics*. University of Illinois Press.
Esping-Anderson, Gosta. 1990. *The Three Worlds of Welfare Capitalism*. Cambridge: Polity Press.
Estévez-Abe, Margarita. 2008. *Welfare and Capitalism in Postwar Japan*. Cambridge University Press.
Evans, Peter. 1989. ‘Predatory, Developmental, and Other Apparatuses: A Comparative Political Economy Perspective on the Third World State’. *Sociological Forum* 4: 561–587.
Ferreira, Francisco HG, Nora Lustig, and Daniel Teles. 2015. ‘Appraising Cross-National Income Inequality Databases: An Introduction’. *Journal of Economic Inequality* 13: 497–526.
Freedom House. 2016. ‘Freedom in the World Territory Ratings, 1973-2016’. https://freedomhouse.org/report/freedom-world/freedom-world-2016.
Fukuyama, Francis. 2011. *The Origins of Political Order: From Prehuman Times to the French Revolution*. Macmillan.
Galasso, Vincenzo. 2006. *The Political Future of Social Security in Aging Societies*. MIT Press.
Gandhi, Jennifer. 2004. ‘Democracy and Development Extended Dataset’. http://politics.as.nyu.edu/object/przeworskilinks.html.
Garrett, Geoffrey. 2001. ‘Globalization and Government Spending around the World’. *Studies in Comparative International Development* 35 (4): 3–29.
Gleditsch, Kristian S., and Michael D. Ward. 1997. ‘Double Take a Reexamination of Democracy and Autocracy in Modern Polities’. *Journal of Conflict Resolution* 41 (3): 361–383.
Gradstein, Mark, and Branko Milanovic. 2004. ‘Does Liberté= Égalité? A Survey of the Empirical Links between Democracy and Inequality with Some Evidence on the Transition Economies’. *Journal of Economic Surveys* 18 (4): 515–537.
Gradstein, Mark, Branko Milanovic, and Yvonne Ying. 2001. ‘Democracy and Income In-Equality: An Empirical Analysis’. CESifo Working Paper. https://www.econstor.eu/handle/10419/75721.
Han, Seung-Mi. 2004. ‘The New Community Movement: Park Chung Hee and the Making of State Populism in Korea’. *Pacific Affairs*, 69–93.
Harms, Philipp, and Stefan Zink. 2003. ‘Limits to Redistribution in a Democracy: A Survey’. *European Journal of Political Economy* 19 (4): 651–668.
Heid, Benedikt, Julian Langer, and Mario Larch. 2012. ‘Income and Democracy: Evidence from System GMM Estimates’. *Economics Letters* 116 (2): 166–169.
Hill, Kim Quaile. 1994. *Democracy in the Fifty States*. U of Nebraska Press.
Ho, Samuel PS. 1979. ‘Rural-Urban Imbalance in South Korea in the 1970s’. *Asian Survey*, 645–659.
Houle, Christian. 2016a. ‘Inequality, Economic Development, and Democratization’. *Studies in Comparative International Development* 51 (4): 503–529.
———. 2016b. ‘Inequality, Ethnic Diversity, and Redistribution’. *The Journal of Economic Inequality*, 1–23.
Houle, Christian, and Paul D. Kenny. 2016. ‘The Political and Economic Consequences of Populist Rule in Latin America’. *Government and Opposition*, 1–32.
Hutchcroft, Paul. 2011. ‘Reflections on a Reverse Image: South Korea Under Park Chung Hee and the Philippines Under Ferdinand Marcos’. In *The Park Chung Hee Era: The Transformation of South Korea*, edited by Pyŏng-guk Kim and Ezra F. Vogel. Harvard University Press.

IMF Research Department. 2004. *World Economic Outlook, September 2004 : The Global Demographic Transition*. International Monetary Fund. http://www.imf.org/external/pubs/ft/weo/2004/02/.
Inglot, Tomasz. 2008. *Welfare States in East Central Europe*. Cambridge: Cambridge University Press.
International IDEA. 2016. 'Codebook for Voter Turnout Data'. International Institute for Democracy and Electoral Assistance, Strömsborg, SE-103 34, SWEDEN.
Iversen, Torben, and Thomas R. Cusack. 2000. 'The Causes of Welfare State Expansion: Deindustrialization or Globalization?' *World Politics* 52 (03): 313–349.
Jain, Shail. 1973. 'Size Distribution of Income: Compilation of Data'. *Development Research Department Discussion Paper; No. DRD 4*. http://agris.fao.org/agris-search/search.do?recordID=US2012405366.
Jenkins, Stephen P. 2015. 'World Income Inequality Databases: An Assessment of WIID and SWIID'. *Journal of Economic Inequality* 13: 629–71.
Johnson, Chalmers. 1999. 'The Developmental State: Odyssey of a Concept'. In *The Developmental State*, edited by Meredith Woo-Cumings. Cornell, CA: Cornell University Press.
Jones, Randall S. 2007. 'Income Inequality, Poverty and Social Spending in Japan'. *OECD Economics Department Working Papers*, no. 556. http://www.oecd-ilibrary.org/economics/income-inequality-poverty-and-social-spending-in-japan_177754708811.
Karabarbounis, Loukas. 2011. 'One Dollar, One Vote'. *The Economic Journal* 121 (553): 621–651.
Kaufman, Robert R., and Alex Segura-Ubiergo. 2001. 'Globalization, Domestic Politics, and Social Spending in Latin America: A Time-Series Cross-Section Analysis, 1973–97'. *World Politics* 53 (04): 553–587.
Kenworthy, Lane, and Jonas Pontusson. 2005. 'Rising Inequality and the Politics of Redistribution in Affluent Countries'. *Perspectives on Politics* 3 (03): 449–471.
Key, Valdimer O. 1949. *Southern Politics in State and Nation*. New York: Knopf.
Kuznets, Simon. 1955. 'Economic Growth and Income Inequality'. *The American Economic Review* 45 (1): 1–28.
Kwon, Soon-Won. 1997. 'Korean Experiences in Poverty Alleviation with Special Reference to the Saemaul Undong'. *The Korean Social Security Association* 13 (13): 183–206.
Larcinese, Valentino. 2007. 'Voting over Redistribution and the Size of the Welfare State: The Role of Turnout'. *Political Studies* 55 (3): 568–585.
Lassman, Peter. 2000. 'The Rule of Man over Man: Politics, Power and Legitimation'. In *The Cambridge Companion to Weber*, edited by Stephen Turner. Cambridge: Cambridge University Press.
Lenski, Gerhard E. 1966. *Power and Privilege*. Vol. 96. New York: McGraw-Hill.
Lijphart, Arend. 1984. 'Democracies: Patterns of Majoritarian and Consensus Government in Twenty-One Countries'.
Lind, Jo Thori. 2005. 'Why Is There so Little Redistribution?' *Nordic Journal of Political Economy* 31: 111–125.
Lindblom, Charles E. 1977. *Politics and Markets: The World's Political-Economic Systems*. Basic Books, Incorporated, Publishers.
Lindert, Peter H. 1994. 'The Rise of Social Spending, 1880-1930'. *Explorations in Economic History* 31 (1): 1–37.
———. 1996. 'What Limits Social Spending?' *Explorations in Economic History* 33 (1): 1–34.
Lipset, Seymour M. 1960. *Political Man: The Social Basis of Modern Politics*. New York: Doubleday.
Liu, Tao, and Li Sun. 2016. 'Pension Reform in China'. *Journal of Aging & Social Policy* 28 (1): 15–28.
Machiavelli, Nicolo. 1515. *The Prince*. Translated by W. K. Marriott. Constitution Society. http://www.constitution.org/mac/prince.pdf.
Mahler, Vincent A. 2008. 'Electoral Turnout and Income Redistribution by the State: A Cross-National Analysis of the Developed Democracies'. *European Journal of Political Research* 47 (2): 161–183.
Marshall, Monty G., Ted Robert Gurr, and Keith Jaggers. 2016. 'Polity IV Project: Political Regime Characteristics and Transitions, 1800-2015: Dataset Users' Manual'. Center for Systemic Peace.
Marshall, Monty G., Keith Jaggers, and Ted Robert Gurr. 2002. 'Polity IV Project'. Center for International Development and Conflict Management at the University of Maryland College Park.
McGuire, James W. 2001. 'Social Policy and Mortality Decline in East Asia and Latin America'. *World Development* 29 (10): 1673–1697.
Meltzer, Allan H., and Scott F. Richard. 1981. 'A Rational Theory of the Size of Government'. *Journal of Political Economy* 89 (5): 914–927.
Milanovic, Branko. 2000. 'The Median-Voter Hypothesis, Income Inequality, and Income Redistribution: An Empirical Test with the Required Data'. *European Journal of Political Economy* 16 (3): 367–410.
———. 2011. *The Haves and the Have-Nots: A Brief and Idiosyncratic History of Global Inequality*. Basic Books, New York.
———. 2012. 'Description of All the Ginis Dataset'. *New York: Luxembourg Income Study. November*. http://siteresources.worldbank.org/INTRES/Resources/469232-1107449512766/Description_All_the_Ginis_dataset.pdf.
———. 2016. *Global Inequality: A New Approach for the Age of Globalization*. Cambridge, Massachusetts: Harvard University Press.
Milesi-Ferretti, Gian Maria, Roberto Perotti, and Massimo Rostagno. 2002. 'Electoral Systems and Public Spending'. *The Quarterly Journal of Economics* 117 (2): 609–657.

Mill, John Stuart. 1862. *Considerations on Representative Government*. London: Dent.
Moon, Bruce E., and William J. Dixon. 1985. 'Politics, the State, and Basic Human Needs: A Cross-National Study'. *American Journal of Political Science* 29 (4): 661–94.
Muller, Edward N. 1995. 'Economic Determinants of Democracy'. *American Sociological Review*, 966–982.
Mulligan, Casey B., Ricard Gil, and Xavier Sala-i-Martin. 2004. 'Do Democracies Have Different Public Policies than Nondemocracies?' *The Journal of Economic Perspectives* 18 (1): 51–74.
Nohlen, Dieter, Florian Grotz, and Christof Hartmann. 2001. *Elections in Asia and the Pacific: A Data Handbook, Volume 2: Southeast Asia, East Asia and the South Pacific*. New York: Oxford University Press.
O'Donnell, Guillermo. 1993. 'On the State, Democratization and Some Conceptual Problems: A Latin American View with Glances at Some Postcommunist Countries'. *World Development* 21 (8): 1355–1369.
Olson, Mancur. 1993. 'Dictatorship, Democracy, and Development.' *American Political Science Review* 87 (03): 567–576.
Ozawa, Jun-ichi. 2013. 'Review and Proposal for the Japanese Social Security System, Mainly Focusing on the Possible Reform Proposals for the Pension System'. *Biophilia* 2 (1): 19–24.
Pampel, Fred C. 1994. 'Population Aging, Class Context, and Age Inequality in Public Spending'. *American Journal of Sociology* 100 (1): 153–195.
Pampel, Fred C., and John B. Williamson. 1985. 'Age Structure, Politics, and Cross-National Patterns of Public Pension Expenditures'. *American Sociological Review* 50 (6): 782–99.
Park, Sooyoung. 2009. 'Analysis of Saemaul Undong: A Korean Rural Development Programme in the 1970s'. *Asia-Pacific Development Journal* 16 (2): 113.
Perotti, Roberto. 1996. 'Growth, Income Distribution, and Democracy: What the Data Say'. *Journal of Economic Growth* 1 (2): 149–187.
Persson, Torsten, Gerard Roland, and Guido Tabellini. 1998. 'Towards Micropolitical Foundations of Public Finance'. *European Economic Review* 42 (3): 685–694.
Persson, Torsten, and Guido Tabellini. 1994. 'Is Inequality Harmful for Growth?' *The American Economic Review*, 600–621.
Piketty, Thomas. 2014. *Capital in the 21st Century*. Cambridge Massachusetts: The Belknap Press of Harvard University Press.
Preston, Samuel H. 1984. 'Children and the Elderly in the US'. *Scientific American* 251 (6): 44–49.
Przeworski, Adam. 1999. 'Minimalist Conception of Democracy: A Defense'. In *Democracy's Value*, edited by Ian Shapiro and Casiano Hacker-Cordsn. Cambridge University Press.
Roberts, Kevin WS. 1977. 'Voting over Income Tax Schedules'. *Journal of Public Economics* 8 (3): 329–340.
Romer, Thomas. 1975. 'Individual Welfare, Majority Voting, and the Properties of a Linear Income Tax'. *Journal of Public Economics* 4 (2): 163–185.
Roodman, David. 2006. 'How to Do xtabond2: An Introduction to Difference and System GMM in Stata'. *Center for Global Development Working Paper*, no. 103. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=982943.
———. 2009. 'A Note on the Theme of Too Many Instruments'. *Oxford Bulletin of Economics and Statistics* 71 (1): 135–158.
Rudra, Nita. 2002. 'Globalization and the Decline of the Welfare State in Less-Developed Countries'. *International Organization* 56 (02): 411–445.
Rudra, Nita, and Stephan Haggard. 2005. 'Globalization, Democracy, and Effective Welfare Spending in the Developing World'. *Comparative Political Studies* 38 (9): 1015–1049.
Scervini, Francesco. 2012. 'Empirics of the Median Voter: Democracy, Redistribution and the Role of the Middle Class'. *Journal of Economic Inequality*, 1–22.
Scheve, Kenneth, and David Stasavage. 2006. 'Religion and Preferences for Social Insurance'. *Quarterly Journal of Political Science* 1 (3): 255–286.
———. 2011. 'Democracy, War, and Wealth Evidence from Two Centuries of Estate Taxation'. working paper, NYU. http://politics.as.nyu.edu/docs/IO/5395/twocenturies_nov10.pdf.
Schumpeter, Joseph. 1934. *Capitalism, Socialism, and Democracy*. New York: Harper & Row.
Segura-Ubiergo, Alex. 2007. *The Political Economy of the Welfare State in Latin America: Globalization, Democracy, and Development*. Cambridge University Press.
Sen, Amartya. 1999. *Freedom as Development*. Oxford University Press, Oxford.
Seo, Sang-mok, Hwan-gu Park, Jung-gi Kim, Hui-seop Lim, Il-seop Choi, Yeong-hwi Lee, and Seong-sun Kim. 徐相穆・朴烜求・金鍾基・林熇燮・崔日燮・李榮輝・金聖順. 1981. *貧困의 實態와 零細民對策 [The State of Poverty and Policies for the Destitute]*. Seoul 서울: Korea Development Institute 韓國開發研究院.
Shelton, Cameron A. 2007. 'The Size and Composition of Government Expenditure'. *Journal of Public Economics* 91 (11): 2230–2260.
Siegle, Joseph T., Michael M. Weinstein, and Morton H. Halperin. 2004. 'Why Democracies Excel'. *Foreign Affairs* 83: 57.
Silliman, G. Sidney. 1984. 'The Philippines in 1983: Authoritarianism Beleaguered'. *Asian Survey* 24 (2): 149–158.

Sinn, Hans-Werner, and Silke Uebelmesser. 2003. ‘Pensions and the Path to Gerontocracy in Germany’. *European Journal of Political Economy* 19 (1): 153–158.
Slater, Dan, Benjamin Smith, and Gautam Nair. 2014. ‘Economic Origins of Democratic Breakdown? The Redistributive Model and the Postcolonial State’. *Perspectives on Politics* 12 (02): 353–374.
Soifer, Hillel David. 2013. ‘State Power and the Economic Origins of Democracy’. *Studies in Comparative International Development* 48 (1): 1–22.
Solidum, Estrella D. 1983. ‘The Philippines in 1982: Consolidation towards Stability’. *Southeast Asian Affairs*, 229–245.
Solt, Frederick. 2016. ‘The Standardized World Income Inequality Database’. *Social Science Quarterly* 97 (5): 1267–1281.
Tepe, Markus, and Pieter Vanhuysse. 2009. ‘Are Aging OECD Welfare States on the Path to Gerontocracy?’ *Journal of Public Policy* 29 (01): 1–28.
Vanhuysse, Pieter. 2012. ‘Does Population Aging Drive Up Pro-Elderly Social Spending?’ *OSE Research Paper*, no. 7. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2404281.
Vink, Gerko, and Stef van Buuren. 2013. ‘Multiple Imputation of Squared Terms’. *Sociological Methods & Research* 42 (4): 598–607.
Windmeijer, Frank. 2005. ‘A Finite Sample Correction for the Variance of Linear Efficient Two-Step GMM Estimators’. *Journal of Econometrics* 126 (1): 25–51.
Wintrobe, Ronald. 2000. *The Political Economy of Dictatorship*. Cambridge University Press.
Wittenberg, Martin. 2015. ‘Problems with SWIID: The Case of South Africa’. *The Journal of Economic Inequality* 13 (4): 673–677.
World Bank. 2016. ‘World Development Indicators’. http://data.worldbank.org/data-catalog/world-development-indicators.
Zweifel, Thomas D., and Patricio Navia. 2000. ‘Democracy, Dictatorship, and Infant Mortality’. *Journal of Democracy* 11 (2): 99–114.

국문초록

소득불평등과 재분배:
민주주의의 영향을 중심으로

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학번: 2015-25110

본 연구의 목적은 소득 불평등과 재분배의 관계를 더 자세히 이해하는 것이다. 최신 연구에 따르면 소득불평등과 재분배는 긍정적인 비례 관계에 있다는 사실이 분명하게 드러난다. 즉, 불평등이 심각한 국가가 재분배를 더욱 더 열심히 실시하는 경향이 보인다는 것이다. 그런데 아직까지 민주주의가 이 관계에 미치는 영향은 명확하지 않다. 본 연구에서는 이를 파악하기 위해 1960-2015 년 사이에 160 여 국가에 걸쳐 수집된 패널데이터를 활용하여 양적분석을 수행할 것이다. 회귀분석의 결과에는 민주주의 측정의 계수가 유의미하지 않는 것에 따라 정치체제의 형태가 재분배 제도에 큰 영향을 미치지 않는다고 알 수 있다. 즉, 민주주의 국가와 권의주의 국가들이 모두 불평등을 완화시키는 것에 관심이 있다는 것이다. 그리고 이결과는 중위 투표자 이론(median voter theory)을 전제해서 정치체제에 따라 분배를 둘로싼 갈등이 다르다고 주장하는 기존연구의 합리성을 의문한다. 더불어 이 논문은 모든 국가에서 고령화와 재분배는 긍정적인 비례 관계가 있는 것으로 나타났다. 이에 따라 현재에 많은 국가에서 관찰할 수 있는 복지 예산의 확대는 투쟁적인 노인 정치(gerontocracy)보다 연금 수급자의 자연스러운 증가 때문이라고 알 수 있다. 마지막으로 이 논문의 제안은 민주주의와 권위주의 국가에서 재분배 정책을 도입하는 정치행위자들의 동기 부여 요소 그리고 그들이 국가 합법화(legitimation)를 위한 사회 계약을 맺는 과정에서의 역할에 대해 더 많은 연구가 필요한다고 본다.

주요어: 소득불평등, 재분배, 복지국가, 중위 투표자, 민주주의, 권위주의, 고령화